

Analysis of Southeast Alaska Commercial Salmon Fishing Infrastructure

FINAL REPORT

PREPARED FOR:

***Alaska Department of Fish & Game
Division of Administration***



Research-Based Consulting

Juneau
Anchorage

AUGUST 2003

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Table of Contents

Executive Summary	1
Purpose	1
Conclusions	1
Introduction.....	5
Study Purpose	5
Study Tasks	7
Regional Infrastructure Needs.....	8
Infrastructure Inventory	8
Infrastructure Constraints	8
Summary of Public Comment.....	12
Survey of Salmon Permit Holders	13
Salmon Market Trends.....	15
Introduction and Background	15
Southeast Alaska Salmon Harvest and Value	15
Major Southeast Product Forms and Wholesale Value	17
Geographic Markets for Southeast Alaska Salmon	20
Market Prospects for SE Salmon	21
Economic Impacts of Infrastructure Projects.....	25
Types of Infrastructure	25
Distribution of Economic Benefits	27
Economic Impact Criteria	28
Measuring Economic Benefits.....	30
Recommendations.....	31
The Role Of Government In Providing Salmon Infrastructure	34
Basis for Public Investment	34
Alaska Infrastructure Development Projects	38
Seafood Infrastructure Development by Other Governments.....	45
Financing Options.....	48
Criteria for Evaluating Salmon Infrastructure.....	55
Sources of Infrastructure Criteria	55
Potential Infrastructure Criteria.....	58
Recommended Priorities for SSSF Infrastructure Projects.....	62
Appendix 1- Fisheries Economic Development Matching Grant Program – 2003 Proposals	65
Appendix 2 – ADOT&PF Project Criteria	76
Appendix 3 – Community Infrastructure Inventory.....	81

Purpose

The purpose of the study is to provide a strategic planning framework for regional infrastructure funding through the Southeast Sustainable Salmon Fund. The study included:

- ♦ Inventory of salmon fishing infrastructure and infrastructure needs in Southeast Alaska
- ♦ Assessment of major salmon market trends and their implications for infrastructure development
- ♦ Research on the role of government in support of industry infrastructure
- ♦ Development of criteria to guide infrastructure priorities and to identify projects that may not be appropriate for SSSF funding
- ♦ Recommendations for promising infrastructure projects around the region

Conclusions

Regional Infrastructure Needs

The regional salmon industry infrastructure that exists today evolved mainly to serve commodity markets. These markets remain very important. However, the most promising opportunities for growth and better profitability in the Southeast salmon industry are in serving niche markets – some of which are potentially quite large – especially in the U.S.

New infrastructure projects are therefore particularly promising if they:

- ♦ Help build a regional brand, for example, by promoting quality or unique regional products.
- ♦ Help address demonstrated niche market opportunities; for example, frozen fillets.
- ♦ Help establish technologies that expand the size of the harvest and/or duration of the season; for example, waste utilization and blast freezing/cold storage.
- ♦ Improve access to markets through more efficient transportation; for example, by means of freight consolidation.
- ♦ Leverage existing resources, expertise and management capacity, especially marketing and distribution capability relevant to target markets.

Salmon Market Trends

High-value salmon from Southeast Alaska are excellent candidates for large-scale niche markets in the continental U.S. These include frozen-at-sea coho, troll king salmon, and bled gillnet sockeye. Southeast Alaska's proximity to major markets combined with chilling and other good handling practices suggest that the region can differentiate itself on the basis of quality.

The fastest growing U.S. salmon market is fillets. U.S. imports of fillets grew 300 percent between 1997 and 2002. Southeast Alaska is well positioned to provide fillet products, especially frozen fillets, which represent 20 percent of U.S. demand. Recent increases in world attention to environmental and health issues associated with farmed salmon may enhance this opportunity. A potential positioning strategy would stress quality, a pristine environment, and health benefits.

Growth in the U.S. salmon market has also created fertile ground for introduction of new products, such as pouched pink salmon. It will take time for significant demand to develop, but new products may also help improve roe recovery and, in combination with freezing and cold storage, extend the processing season over a longer period of time.

Finally, markets for fish waste products such as meal, oil and hydrolizate appear strong enough to support further development of this type of product in Southeast Alaska. Better waste utilization would improve roe through-put and help producers address pollution discharge permitting standards.

Economic Impacts of Infrastructure Projects

Two concepts are key:

- Understanding the extent to which different groups would benefit, including harvesters (ex-vessel value), processors (first wholesale value), communities (local employment and taxes), and the region as a whole.
- Ensuring that a project would function in combination with other infrastructure to form an integrated chain of production capable of meeting an identified market demand.

The business plan for a proposed infrastructure project is the appropriate place to make the case for the project's expected economic impact. It should provide:

- Estimates of employment, spending, and tax revenues to be generated.
- Market, management, financial and other information necessary for SSSF evaluators to assign a probability of success to the project.

The Role of Government in Industrial Infrastructure Development

The role of government in infrastructure development depends on whether the goals are provision of public goods, assistance to needy populations, or regional economic development. In general, in order to be eligible for public funding, an infrastructure project should demonstrate that private financing is not available, except where the project will provide a clear public good (one with little or no marginal cost for each additional user, such as a dock or a road). Achieving public goals through private entities, regardless of whether they are structured as for-profit or not-for-profit, requires careful financial structuring, contracting, oversight, and evaluation.

Potential projects vary substantially by level of complexity, amount of funding needed, and degree of investment and program risk. The more complex the project, the more vital are management capacity and stability as well as access to private sector expertise and resources. The narrower the direct benefits from the project (i.e., a single company or community), the more desirable it is for the beneficiaries to contribute substantial resources of their own. If a business venture must succeed financially in order to benefit the general public (rather than as a technology demonstration, for example), then investment in that venture should be scrutinized especially carefully.

Recommended Infrastructure Priorities

The SSSF is likely to be most effective if it focuses on infrastructure that both meets the criteria discussed in this report and is practical to fund. In general, quality enhancement is an attractive focus for an ADF&G-managed fund, but it need not be the over-riding consideration. Following are four promising types of infrastructure projects:

1) Ice machines and blast/belt freezers

Ice is a broad need that directly addresses quality. Belt freezers might also be treated as an investment in quality, but also help the industry develop new product forms and extend the processing season. Funding belt freezers would be a way to support development of locally popular cold storage and community processing facilities without getting the SSSF involved in detailed evaluation of those potentially complex and expensive projects (see below).

2) Technology innovation

To encourage regional innovation, SSSF might require that the technology, if successful, be retained in the region for the general good of the region and that access is not limited to a small group of users. Technology funding might include innovative **transportation projects**, especially those with the potential to be self-supporting.

3) Fish waste utilization

Technological advancements in waste processing combined with market demand for products, potential improvements in roe recovery, and regulatory limitations on waste disposal make this a high priority area.

4) Small freight consolidation facilities at airports

A number of different kinds of freight consolidation facilities have been proposed and should be considered. The simplest are short-term airport cooler storage during flight connections when fresh product is shipped from communities near the fishing grounds to larger airports at regional hubs.

Popular but More Challenging Projects

There is a good deal of interest in developing community custom processing and cold storage operations around the region. However, they are challenging to evaluate and fund. Additional planning is needed to assess the number and location of communities where these facilities are likely to be self-sustaining, how multiple facilities across the region may affect one another, and to identify the most promising types of management structures.

Study Purpose

The purpose of the study is to articulate the most effective role for the Southeast Sustainable Salmon Fund in regional salmon infrastructure development. That is, in the context of the market and Southeast Alaska producers' capacity to respond to the market, what is the best use of this particular source of public funds? The study is guided by these four concepts:

1. The region's current infrastructure capacity – What exists and where are the gaps?
2. Use of (limited) public funds – What is appropriate and effective?
3. Market conditions – What opportunities make sense for Southeast Alaska?
4. Economic impact – What projects are likely to produce the greatest benefits and how should benefits be measured?

Current Infrastructure Capacity

The study includes an inventory of salmon-industry infrastructure around the region, including:

- ♦ Tender and fishing vessel off-load capability
- ♦ Public and private dock facilities
- ♦ Cranes, hoists and other on/off loading equipment
- ♦ Ice making and cold storage

The study more generally addresses processing equipment, utilities, and freight.

Public Funds

There are three generally accepted reasons for public funding of infrastructure:

1. Public Goods – Government traditionally supplies public goods, that is, assets that address a general societal need and for which the marginal cost of the next user is very low or zero. Highways and public defense are typical examples.

2. Public Aid – Government often provides financial assistance to communities that have sustained severe natural or economic damage, particularly when the source is beyond community-level control.
3. Economic Development – In theory, generating economic activity is the realm of the private sector. Nevertheless, it is a common concern of governments.

The three approaches are neither mutually exclusive nor, necessarily, supportive. They invite very different measures of effectiveness. Public goods are often viewed as successful when they have high usage. The value of public aid is usually seen as a function of need. Economic development may be measured in a great many ways, some of which include social benchmarks such as “standard of living” and others that simply quantify economic activity without regard to who benefits.

It is beyond the scope of the study to analyze or suggest how funding of public goods, public aid and economic development should be ranked or balanced. The study, therefore, focuses on differentiating the types of industry-specific infrastructure development that, in the past, have been considered successful and unsuccessful investments of public funds.

Market Conditions

The study evaluates both potential public roles and regional infrastructure capacity in the context of market conditions. This approach is based on the most fundamental of strategic planning concerns, “How should the region position itself to benefit from the global salmon market?” The question is similar, but not identical, to that implied by the Alaska Constitution, namely, “What is the highest value of the salmon resource to the people of Alaska?” The study focuses only on the trade value of Southeast salmon as a product. It does not consider social, cultural, environmental, or recreational value.

In spite of its limitations, however, the marketplace is the central indicator of financial value. As a basis for priorities, it has the advantage of being tracked and analyzed on a regular basis. Further, its unit of measure – dollars – while not capturing everything of importance, is at least readily quantified and understood.

Economic Impact

This is the measure by which most infrastructure projects are judged. Key questions include what groups receive economic benefits and for how long, and to what extent projects create synergistic benefits in multiple communities or industries. The study develops criteria to help assess the potential economic impacts of different types of projects.

Study Tasks

Study tasks included the following:

Infrastructure Database. Accompanying this report is a database that catalogs publicly available salmon fishing infrastructure in the major fishing communities of Southeast Alaska. It includes information from harbormasters, planning documents, freight schedules, and interviews with community and industry representatives.

Public Involvement. Public meetings were held in Juneau, Sitka, Petersburg and Ketchikan to learn about salmon industry priorities and concerns with respect to infrastructure. Comment sheets were distributed to all interested parties at meetings and by fax and email as requested. A series of three public teleconferences also was held to encourage input from smaller, more rural communities.

The study team sent community surveys to municipal bodies and tribal organizations. Several communities and organizations responded by describing local needs and proposed infrastructure projects. These include Petersburg, Hoonah, Coffman Cove, Metlakatla, Yakutat, Angoon, Klawock, and Kake.

Salmon Industry Trend Analysis. Using McDowell Group data as well as public information and input from industry experts, the study team identified major market trends and analyzed their implications for Southeast Alaska salmon producers.

Role of the Public Sector and Investments to be Avoided. Analysis included past infrastructure development projects throughout Alaska. Information was also collected on government infrastructure development policies in three fishing economies: Norway, Iceland and Chile.

Infrastructure Impact Analysis and Project Selection Criteria. The study team developed a matrix for “scoring” infrastructure projects on a variety of measures and drafted criteria designed to identify the best public investments.

REGIONAL INFRASTRUCTURE NEEDS

Infrastructure Inventory

The study included development of a database of Southeast Alaska salmon industry infrastructure (Appendix 3). The database focuses on public infrastructure in key fishing communities throughout the region.¹ It includes information about:

- ♦ Harbor facilities and planned improvement projects
- ♦ Docks, hoists, vehicle access, and ice making
- ♦ Upland storage availability, fees, and constraints
- ♦ Air and marine freight service

The database is a snapshot of local infrastructure in each community. It is a reference tool for planning and for evaluating the impacts of future infrastructure projects. The following communities are represented:

*Angoon	*Hoonah	Point Baker
Baranof	*Hydaburg	Port Alexander
Coffman Cove	Hyder	Port Protection
*Craig	*Juneau	*Sitka
Edna Bay	*Kake	*Skagway
*Elfin Cove	Kasaan	Swanson Harbor
Entrance Island	(*)Ketchikan	Taku Harbor
Funter Bay	Klawock	Tenakee Springs
*Gustavus	*Metlakatla	Thorne Bay
*Haines	*Pelican	*Wrangell
Helm Bay	*Petersburg	*Yakutat
Hollis		

Starred communities have the most detailed information. Entries for Ketchikan are limited because the City declined to provide information beyond what is available in the State Harbor Directory.

Infrastructure Constraints

Each of the infrastructure categories above is potentially associated with a constraint on the harvesting, processing, marketing and shipping of Southeast Alaska salmon. Constraints may be thought of as gaps in the supply chain for Southeast salmon.

¹ Information about privately owned infrastructure was supplied by a number of regional processors. This proprietary information was important to study findings, but is not included in the database for reasons of confidentiality and because it does not represent a complete picture of regional private infrastructure.

Supply chain gaps tend to fall into several categories, some of which overlap. These include:

- ♦ Management limitations
- ♦ Gaps in local (community) infrastructure
- ♦ Gaps in commercial (manufacturing) infrastructure
- ♦ Gaps in transportation (freight) infrastructure

These are described in more detail following a brief discussion of the nature of supply chain gaps.

Supply Chain Gaps

Access to markets is the overarching regional infrastructure theme. While there is always room for improvement, fishermen and processors did not cite major faults with the infrastructure available to catch and land fish, i.e., docks, hoists, support services, etc. Rather, the infrastructure most often needed is that which allows the industry to produce products for growing niche markets and to ship those products efficiently.

Another way of saying this is that the supply chain is broken. More accurately, the chain has yet to be extended in new directions to address changing markets. As a result, the potential of individual pieces of infrastructure to have a significant impact is limited because, in most cases, more than one supply chain link is missing or inadequate. Typical problem links include transporting fish from the fishing grounds to a processor, processing in a way that meets market demand, shipping or holding processed products in a way that maintains highest market value, etc. The broader the supply chain span that an infrastructure project proposes to bridge, the more complex and difficult is the challenge.

Historically, the Southeast Alaska supply chain ran from catcher, to tender, to processor (primarily canneries or cold storage), to barge, to distributor (Lower 48), to market (national and global). When air transport of fresh product was introduced, it provided an alternative, but one that was and is capacity-constrained. This together with the seasonality of salmon runs has prevented air transport from becoming a dominant market link.

The gap most often confronted by fishermen is that there are fewer and fewer buyers available, especially tenders out on the fishing grounds. Clearly, however, this gap can't be addressed until other parts of the supply chain – involving production and marketing – are also repaired.

The types of infrastructure most often cited as key to fixing production and marketing gaps are community custom processing and cold storage capacity. This is an attempt to bridge the supply chain so that catcher/processors and other smaller suppliers can directly target niche and seasonal markets. At least ten communities have expressed interest in building or expanding this type of facility, including Angoon, Hoonah, Ketchikan, Sitka, Wrangell, Hydaburg, Craig, Coffman Cove, Metlakatla, and Yakutat. The potential of community-based, multi-purpose facilities is clear, but they are relatively complex projects that must be well-managed to succeed.

Finally, transportation can represent a supply chain gap. In only a few instances, however, are potential transportation solutions specific to the salmon industry. Examples are LCL (less-than-container-load) shipment of fresh salmon to air transfer points and refrigerated freight consolidation facilities. Many of the transportation improvements that have the potential to aid the salmon industry are large, expensive projects with socio-economic implications far beyond the industry, for example re-design of the ferry system or road links to the Lower 48.

Management Structure

A major constraint on the more complex and potentially far-reaching infrastructure projects is the difficulty of forming and maintaining effective management structures capable of making the assets productive over their useful lives. Management structures represent a continuum. At one extreme is private control, which normally has the best access to industry expertise and private financing but little or no responsibility to the public interest. At the other extreme is government control, which has many mechanisms to ensure public accountability, but little access to expertise and private resources. In between are a nearly infinite range of options that include cooperatives like the Seafood Producers Coop in Sitka, quasi-public authorities like the Inter-Island Ferry Authority, public boards like the newly-formed Marine Advisory Board of the Alaska Marine Highway System, non-profit organizations, public-private partnerships, public corporations like Alaska Housing Finance Corporation, and many more.

While government has developed expertise in managing many kinds of public infrastructure, such as docks, bridges and highways, it has not shown itself to be a good manager of commercial infrastructure, such as production facilities, distribution networks, and marketing entities. Governments have more complex missions than private companies and these impinge on the ability of government-operated infrastructure to take advantage of market opportunities. The Alaska Marine Highway System is an example of a government infrastructure asset that has, to an extent, been hamstrung as an agent of economic development because of conflicting missions and priorities.

Local Infrastructure Gaps

Infrastructure gaps that have their main impact at the community level include:

- ♦ Power and fuel cost abatement – costs vary depending upon local sources of supply. Abatement requires either new technology or ongoing subsidy.
- ♦ Ice machines and ice storage – Some communities have adequate ice supplies, mainly through private processors. However, ice was noted as a need by at least some residents of Haines (high priority project), Wrangell (no public ice-making available), Ketchikan (supplies limited during the busy season), Juneau (Auke Bay), and many of the smaller fishing communities.
- ♦ Dock enhancement projects – The need is most often for work floats and other docks that make vessels directly accessible by vehicle (i.e., “drive down” docks).

- ♦ Vessel services – This was not cited as a critical need. However, residents of some communities, including Wrangell, Sitka and Craig, seek new or improved haul-out facilities.

Commercial Infrastructure Gaps

The two types of commercial processing technology receiving the most interest are pinbone removal systems and pouch processing lines. Pinbone removal expands access to the fillet market in the US, and their use has begun to spread. Initial pouch-processed products have been well received by the market. However, the technology may be most valuable as a way of increasing roe production, as discussed in the Market Trends section of this report.

Fish waste handling and utilization are seen as key to expanding production. The potential benefits of new approaches have environmental as well as commercial implications and are discussed elsewhere in this report.

One type of commercial infrastructure that is less available than in the past is pre-season financing for fishermen. Canneries no longer fill this need in many places.

Freight Infrastructure Gaps

Freight is, of course, fundamental to the Southeast salmon industry and the region in general. Barge service is well established and, although residents of some communities say there are cost issues, generally serves the region well.

Interest in freight infrastructure focuses mainly on two areas: 1) more, and more consistent, freight service on jet airliners or air freighters and, 2) methods of quickly and reliably consolidating shipments of fresh product from smaller communities throughout the region for efficient transport to Lower 48 markets (including use of small-planes, ferry and other marine transport, and collection/storage facilities at airports).

The issue for the SSSF is the extent to which either of these goals may be achieved by innovation, rather than ongoing subsidy, since the fund does not have the resources to ensure the latter. Four innovations have been proposed:

- ♦ An information and freight coordination system that would identify air freight needs on a daily basis and communicate them to one or more jet carriers in order to make best use of available space and to make it possible to add capacity when warranted.
- ♦ Refrigerated holding facilities at the region's larger airports. These would be relatively small, designed to accommodate fresh product arriving by small plane, keeping it at optimum temperature while awaiting jet connections.
- ♦ A network of freight consolidation facilities. These would be similar to, but larger than the airport holding facilities above. They would allow local processors to combine shipments for optimum use of available air freight capacity.

- ♦ Configuration of Alaska State ferries or privately operated vessels to carry less-than-container-load (LCL) quantities of fresh seafood quickly to hub communities where air and, possibly, road connections are available.

Summary of Public Comment

The study team gathered information on infrastructure needs from interviews, questionnaires, public meetings and teleconferences, and written, emailed, and telephoned comments (See Methodology section). Those providing input included harbor masters, city and tribal officials, processors, fishermen, and the general public.

Summary of Public Involvement Themes

Nearly all comments provided through the public involvement process (meetings, teleconferences, comment sheets, individual phone calls, and emails) came from people representing one or more aspects of the salmon industry or communities that are heavily dependent on fishing. Non-industry comments addressed issues around the use of hatcheries and the effectiveness of environmental precautions to preserve and enhance spawning runs. Comments summarized below were also obtained through the survey of salmon permit holders.

Processors generally expressed concern about the status of the industry and its effects on the region. Understandably, however, their attention tends to be focused on what they see as best for their own operations. New product forms generating the most interest among processors are frozen fillets (both high-value fillets and pink fillet blocks) and pouch-processed pink fillets. Other processor priorities include fish waste utilization (mainly to allow more efficient roe harvest) and more/cheaper air transport.

What fishermen experience as the greatest infrastructure loss is the relative lack of buyers on or near the fishing grounds, compared with ten or more years ago. This, of course, reflects lack of demand and low prices for some traditional product forms and results from a combination of oversupply and changing market tastes. Low prices and lack of nearby buyers is forcing fishermen to explore other marketing avenues. As a result, the type of infrastructure they most often say they need is marketing help.

Topics following are not recommendations, but represent the views of those providing the comment.

- ♦ **Access to the resource.** Fishermen, especially, requested longer openings and seasons to allow fishermen and processors to spread supply over a longer period (to support higher prices) and to pay more attention to quality. Some people advocated for more hatcheries to extend runs, including a large-scale pink and chum hatchery. Others, however, expressed concern that the region could not biologically support more hatcheries.
- ♦ **Better fish waste utilization.** This received broad support, as it would improve industry economics by creating additional value, show that the industry is committed to protection of the marine environment, and, not insignificantly, help

the industry to meet National Pollution Discharge Elimination System (NPDES) permit requirements. The Environmental Protection Agency (EPA) has indicated it will encourage efforts to divert fish waste from public waters.

- ♦ **New technology.** Along with various waste utilization technologies, interest was expressed in pouch processing, better temperature control, gas charged containers, pin-bone removal, sex-sorting for roe removal and shellfish product testing in Southeast. It was suggested that tax incentives would be an effective way to encourage adoption of some of these technologies.
- ♦ **Transportation.** Many advocated for subsidized freight rates. Of particular concern was subsidy – or other ways to increase the airfreight space allocation – during peak harvest. It was suggested that revising fish transport regulations would reduce handling and improve quality. Fishermen in Ketchikan complained of lack of direct access to the airport by fishing boats. Some industry representatives say that improved NAV aids are important to more reliable air freight, particularly in Sitka, Wrangell and Petersburg.
- ♦ **Marketing.** It was suggested that promoting and marketing premium products like fresh king salmon helps to create awareness of Southeast Alaska salmon in general and lends a quality image to other salmon products. A number of comments supported the idea of a buyer/seller matching service. Regional branding and its more structured cousin, platform marketing, were also proposed.
- ♦ **Production Facilities.** Many people supported publicly accessible cold storages and custom processing facilities. This was seen as a way to promote innovation and lessen reliance on commodity markets.
- ♦ **Fleet Support.** Those making comments did not advocate for fleet support as a regional strategy. However, individuals in a number of communities pointed to local needs for cranes, gear storage, drive-down dock access, etc. As noted under “Infrastructure Gaps,” above, ice machines are seen as a need in several locations. Covered marine ways was a suggestion in Sitka.
- ♦ **Enhancement.** Among the few comments addressing biological concerns, one person said decisions about hatchery enhancement projects should take into account the biological carrying capacity of the local area and the region. Now that runs have mainly recovered, does hatchery operation really add harvestable fish, or simply displace wild ones?

Survey of Salmon Permit Holders

The study team surveyed 264 salmon fishing permit holders representing handtrollers, powertrrollers, gillnetters, seiners, and Yakutat setnetters. The purpose of the survey was to better understand the infrastructure needs of fishermen working in different gear groups and different parts of Southeast Alaska. Those surveyed were selected at random from the Alaska Department of Fish and Game Commercial Fisheries Entry Commission permit holders’ list for 2002. 197 of the permit holders are residents of Alaska and 67 live out-of-state.

Survey respondents answered both closed and open-ended questions. Open-ended responses were recorded and used by the study team in analysis of strategic issues facing the fishery. These responses noted some local issues, but tended to echo the public involvement themes described above. Answers to the remaining survey questions are summarized below.

Most respondents are experienced fishermen. More than 90% have fished commercially for 20 years or longer. The communities where they most often unload their catch are roughly evenly divided among five areas:

- ♦ Sitka/Chatham Strait
- ♦ Yakutat/Icy Strait
- ♦ Juneau/Lynn Canal
- ♦ Ketchikan/Prince of Wales/Clarence Strait
- ♦ Petersburg/Sumner Strait

Fishermen were asked how well various infrastructure in their areas meet their needs. (Very well = 4, Well = 3, Somewhat well = 2, Does not meet needs at all = 1.) Average scores are given below by area.

How well do the following kinds of infrastructure meet your needs?

	Sitka/ Chatham Strait	Yakutat/ Icy Strait	Juneau/ Lynn Canal	Ketchikan/ POW/ Clarence Strait	Petersburg/ Sumner Strait	Average
Ice Availability	3.3	3.0	2.7	2.9	2.9	3.0
Processing Capacity	3.1	2.7	2.8	2.9	3.0	2.9
Dock Facilities	3.3	2.8	2.5	2.5	3.2	2.9
Other Loading	2.9	2.7	2.5	2.7	3.0	2.8
Tender Offloading	2.4	2.4	3.0	2.8	2.9	2.7
Cold Storage	3.3	2.8	1.9	2.6	2.4	2.6
Fish Waste Handling	2.6	2.6	1.6	2.4	2.8	2.4
Freight Options	2.0	2.3	2.5	2.1	1.9	2.2

Fishermen were asked what would be the most important salmon infrastructure improvement 1) for their own businesses and 2) for the region as a whole. In both cases the most requested infrastructure was more marketing and consumer education. Approximately 30 percent of respondents cited this issue.

Asked what important infrastructure had been lost over the past ten years, nearly all of those who answered said buyers, processors and/or tender service. Several said they have seen a decline in ice and cold storage availability.

The combination of ice and a place to freeze and store catch is a need echoed in a number of communities, including Juneau, Wrangell, Haines, Ketchikan, and several smaller communities.

Introduction and Background

This section is an overview of Southeast Alaska salmon harvest, value, product forms and primary markets. The goal is to identify the implications of key market trends for salmon industry infrastructure development in Southeast Alaska.

In text and charts throughout this section, two measures of salmon value are used:

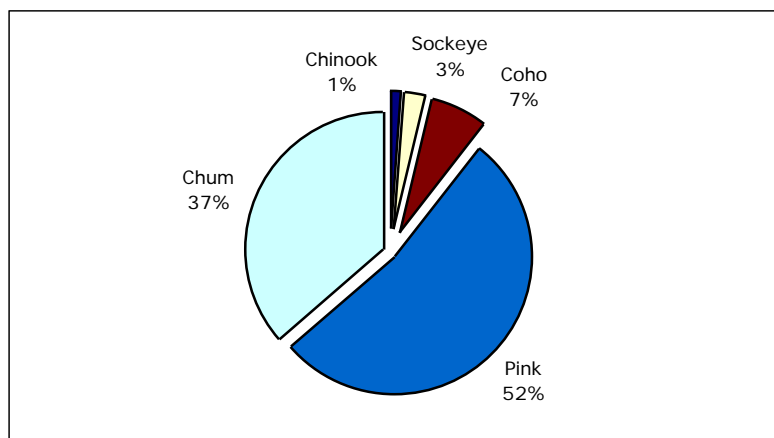
- *Ex-Vessel Value* -- payments to harvesters for raw salmon
- *First Wholesale Value* – Freight On Board (FOB) Alaska value of salmon products upon sale by a processor to a buyer outside their affiliate network.

Ex-vessel value is the more commonly used measure, but refers to earnings of only one sector of the industry since it consists of payments to harvesters. First wholesale value is a more complete measure of salmon industry value. It reflects the spectrum of economic activity associated with converting live salmon to saleable food products, including payments to harvesters, payments to labor and subcontractors, operating costs, taxes and other expenses. During 1997-2001, ex-vessel value in Southeast salmon fisheries averaged slightly over one-third (38 percent) of the first wholesale value of Southeast Alaska salmon.

Southeast Alaska Salmon Harvest and Value

The Southeast salmon harvest can be divided into two segments; traditional high-value species (Chinook, coho and sockeye) and the high-volume species (pink and chum salmon). By weight, about 90 percent of the Southeast salmon harvest is pink and chum. Although they make up only 10 percent of the harvest, however, the high-value species comprise more than one-third (36 percent) of ex-vessel salmon value in Southeast Alaska.

Southeast Alaska Salmon Harvest
1998-2002 Average Share of Harvest by Weight



Source: Alaska Department of Fish and Game

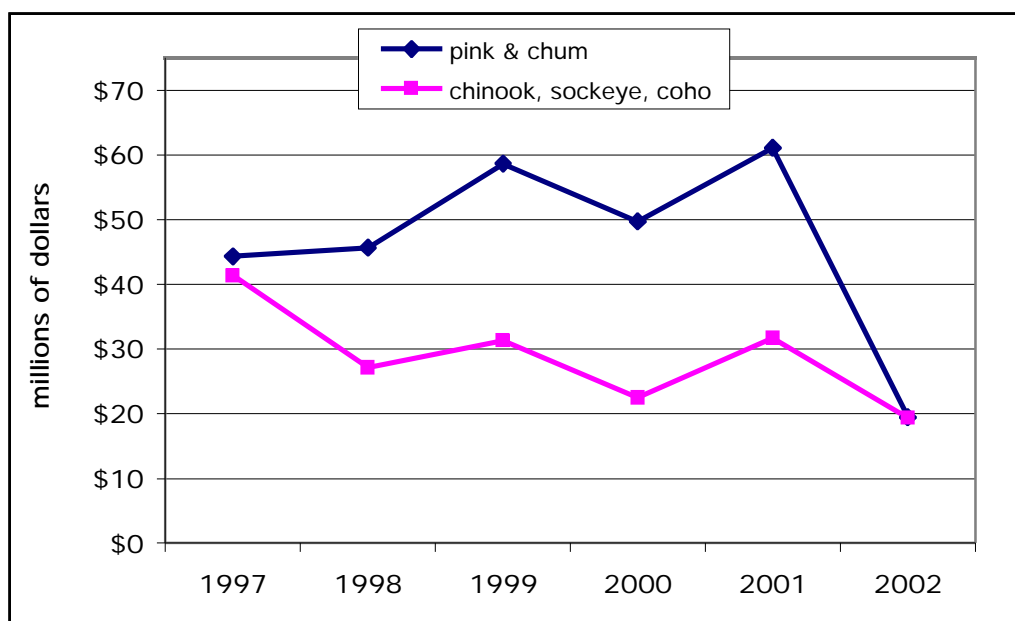
The species composition of the Southeast Alaska harvest helps to insulate the region from price erosion associated with farmed salmon. Pink and chum salmon are not immune to farmed-salmon price impacts, but those impacts have been far less severe than for high-value species such as sockeye. While Alaska experienced dramatic declines in both harvest and unit value of sockeye from 1997 forward, the fact that only about three percent of the Southeast harvest is sockeye meant there was less impact there than in other regions. Partly as a result, Southeast Alaska has been the top-earning salmon region in the state in four of the last six years.

Total ex-vessel value of the Southeast harvest was temporarily sustained by unusual circumstances in 1999, 2000 and 2001.

- The largest Alaska pink harvest on record occurred in 1999 and chum harvest that year ranked as second largest, only slightly below the record.
- The largest Alaska chum harvest on record occurred in 2000, accompanied by a strong price (five-year high) resulting from harvest shortfalls in Japan. The fall chum fishery in Japan accounts for nearly three-quarters of the world supply.
- The third-largest Alaska pink harvest on record occurred in 2001, and chum prices rose to an eight-year high in anticipation of another poor return to Japan.

While record harvest volumes and a strong roe market sustained pink and chum value during 1999-2001, neither factor was in place for the 2002 harvest, and ex-vessel value dropped dramatically. Value of king, sockeye and coho also dropped in 2002, but not nearly as much as pink and chum. The overall effect was a sudden plunge in ex-vessel value in 2002, from the five-year average of \$85 million down to \$39 million.

Southeast Alaska Ex-Vessel Salmon Value
1997-2002 Ex-Vessel Value by Species Group



Source: Alaska Department of Fish and Game

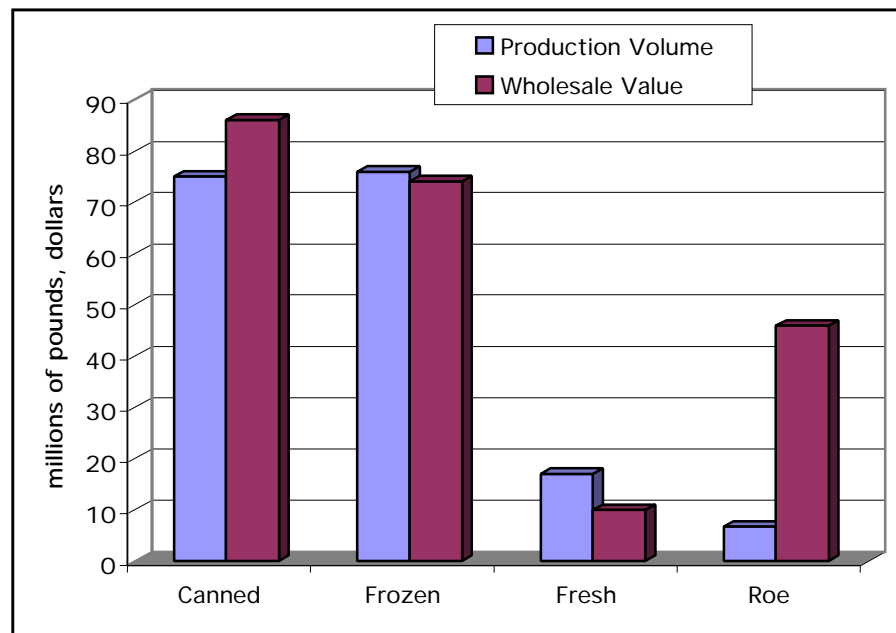
Major Southeast Product Forms and Wholesale Value

Product-form composition and wholesale value below are drawn from Alaska Department of Fish and Game Commercial Operators Annual Report (COAR) data for the period 1997-2001. Product-form composition and first wholesale value are five-year averages from that period.

Canned pink salmon accounts for 38 percent of production and frozen chum 28 percent. Frozen coho is the third-largest product by volume, but amounts to only 7 percent of production, a distant third to frozen chum. Canned pink and frozen chum salmon account for two-thirds of Southeast Alaska production volume.

The value share of canned and frozen salmon in the chart below is fairly consistent with their respective production volumes, but the value of fresh salmon is disproportionately low and merits some explanation. A small percentage of fresh salmon production is high-value salmon shipped to niche markets by air. However, most of the fresh salmon category in the chart represents raw pinks tendered to British Columbia for canning and also container loads of fresh chum sold at very low prices. The recent record harvests have occasionally exceeded regional processing capacity and the fish may be sold in this manner as a means to handle the overflow. This “excess production” has decreased overall unit value of fresh salmon as detailed in this graph.

Southeast Alaska Salmon Production & Value
1997-2001 Average, by Category



Source: ADF&G Commercial Operators Annual Report

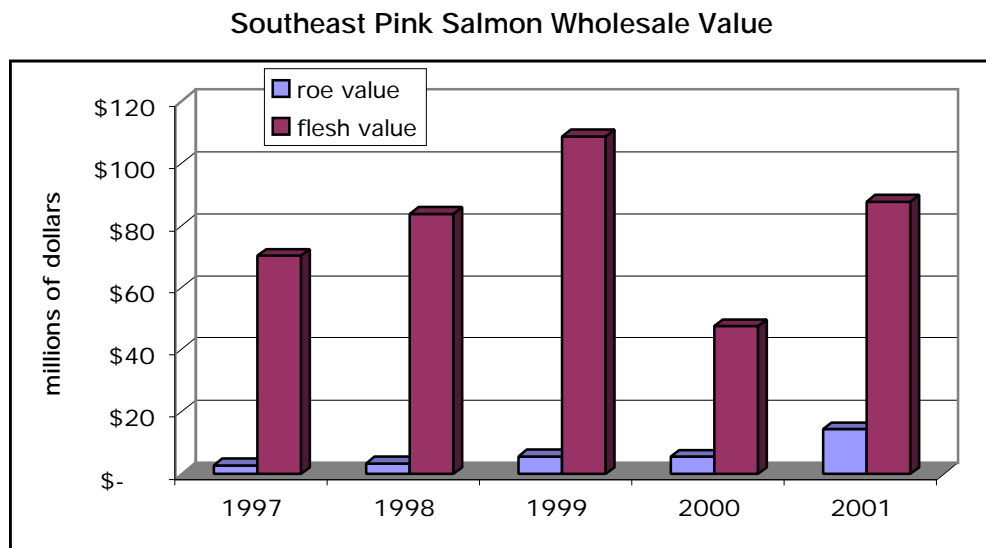
Pink and Chum Roe

Salmon roe makes up a substantial (and increasing) portion of first wholesale value of Southeast salmon. Pink and chum salmon roe make up about 80 percent of statewide salmon roe value and since most salmon caught in the region is pink and chum, roe is a major element of Southeast wholesale value and the primary driver for chum prices. When roe prices peaked in 2000, salmon roe accounted for 37 percent of total Southeast Alaska salmon wholesale value. Roe prices were lower in 2001, but roe still accounted for 21 percent of regional salmon wholesale value.

On a per-unit basis over the past five years, roe value has been increasing while the value of flesh products has declined. Between 1997 and 2001, statewide unit value of roe increased by about 75 percent while the statewide per-unit flesh value of pinks and chums decreased by 20 percent. As a result of roe's increasing value, statewide recovery rate for pink and chum roe improved over the same five-year period from 1.7 and 2.9 percent of body weight respectively in 1997 to 2.2 percent for pinks and 4.1 percent for chums in 2001.

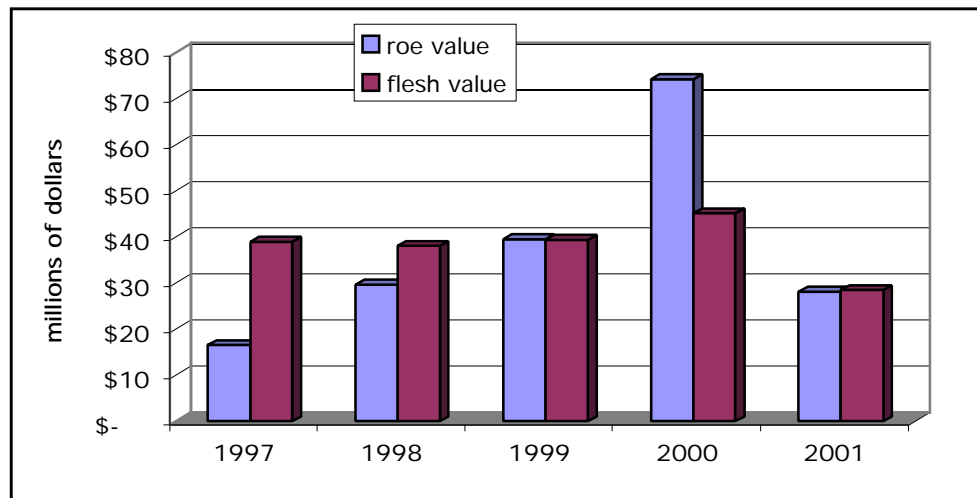
Increasingly, however, flesh utilization has become a limiting factor on production of high value roe. Technologies and machinery that enable faster utilization of pink and chum flesh are therefore a critical piece of efforts to increase roe production or to improve the quality of roe harvest by speeding the recovery process. Alternatively, so-called "wanton waste" regulations requiring utilization of carcasses after roe-recovery might be modified.

In the charts below, "flesh value" refers to the wholesale value of all products made from the respective species. Typically, 75 percent of pink salmon is canned and 80 percent of chum salmon is frozen.



Source: ADF&G Commercial Operator's Annual Report

Southeast Chum Salmon Wholesale Value



Source: ADF&G Commercial Operators Annual Report

Canned Salmon Market

Canned pink markets are flooded, the result of record returns and harvests of pink salmon throughout the last decade. Sales volume of canned pink salmon is strong, but is likely stimulated by very low wholesale case prices. From an ex-vessel price perspective, the pink fishery may very well be a casualty of its own success.

Prior to 1991, the Alaska pink salmon harvest had never exceeded 100 million fish. In fact, average statewide harvest during 1970-1989 was only 47 million. But as long-term recovery efforts and hatchery programs began to succeed, stocks rebounded and commercial harvest reached record levels. The average pink harvest during the 1990s was 104 million fish, more than double the average of the previous two decades. Record production continues today. The 2001 harvest of 127 million pink salmon ranks as the third largest in the last century.

The record runs of the last decade are mostly a product of wild stocks. Statewide, only about 25 percent of the total pink harvest is from hatchery production.

The combination of high returns and low prices creates a through-put problem for processors. Existing facilities are not always able to handle all the fish delivered during peak periods. However, low prices make it unattractive for the industry to invest in additional canning capacity. Recently processors have limited the amount of pink salmon they purchase from the Southeast seine fleet. If pink runs remain strong, harvest sizes may be limited by a combination of processor capacity and market demand rather than by the size of the harvestable surplus. Alternative product forms, such as frozen pink fillet blocks, may help address the issue.

Geographic Markets for Southeast Alaska Salmon

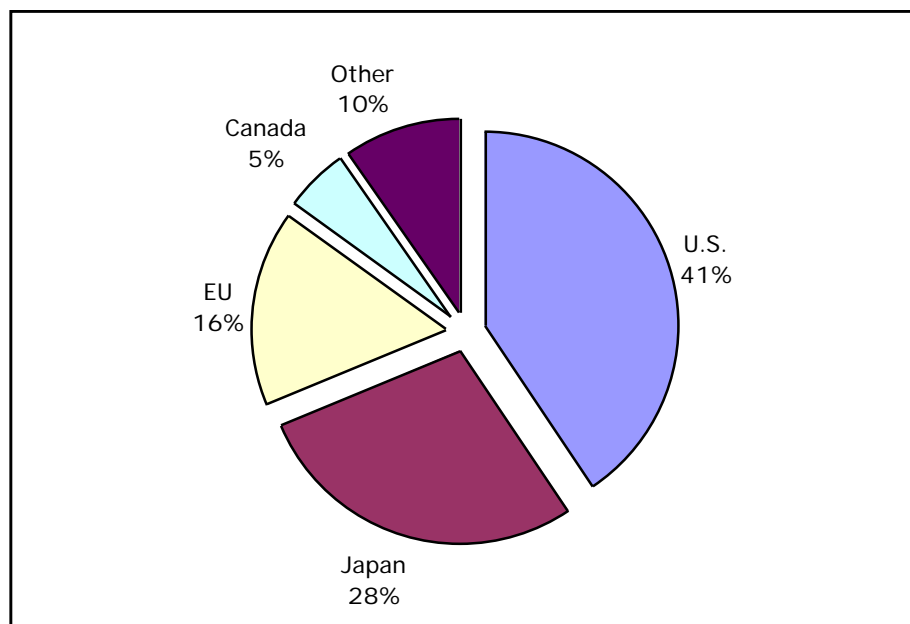
For purposes of the following discussion, Southeast salmon products are assumed to have the same market destinations as similar products caught and processed elsewhere in the state. The market destinations shown below for Southeast Alaska salmon products were determined by applying the product-form proportions of regional production, by species, to the known market destinations for the same products statewide. For instance, 70 percent of canned pink salmon produced in Alaska is consumed in the United States so we assume that 70 percent of canned pinks from Southeast are consumed in the U.S.

Markets shown are computed by value rather than volume. Since unit value of salmon products can vary from a few cents to several dollars per pound, value is a better indicator of market importance.

The most important market for Southeast Alaska salmon is the U.S., followed by Japan and then the European Union countries. Since canned pink is the number one regional product, the domestic market figures prominently for Southeast Alaska. The U.S. market also receives a substantial amount of the high-value salmon produced in the region.

Japan's importance is due mostly to the roe market. Virtually all salmon roe is exported and Japan receives over 95 percent of roe exports. European Union countries import a mix of high-value salmon and pink and chum from Southeast Alaska.

Market Destinations of Southeast Alaska Salmon
By Value, 1997-2001 Average



Source: Salmon Market Information Service

Market Prospects for Southeast Alaska Salmon

Of all the salmon-producing regions in Alaska, Southeast is closest geographically to its primary market. Southeast Alaska also has the longest harvest season in the state for high-value salmon and is the only region in the state that can supply fresh salmon during every month of the year.

These factors make high-value salmon from Southeast Alaska an excellent candidate for large-scale niche markets, such as frozen-at-sea coho, troll king salmon, and bled gillnet sockeye.

The fact that virtually all Southeast Alaska salmon fishermen chill their catch is an important factor in targeting niche markets and an area where Southeast may be able to differentiate (brand) itself relative to other regions. “Temperature abuse” (i.e. not chilling fish) is the number-one cause of fillet gaping, a major impediment to successful fillet marketing. However, chilling (and proper handling in general) affect the quality and shelf-life of virtually all salmon products.

Salmon Fillets

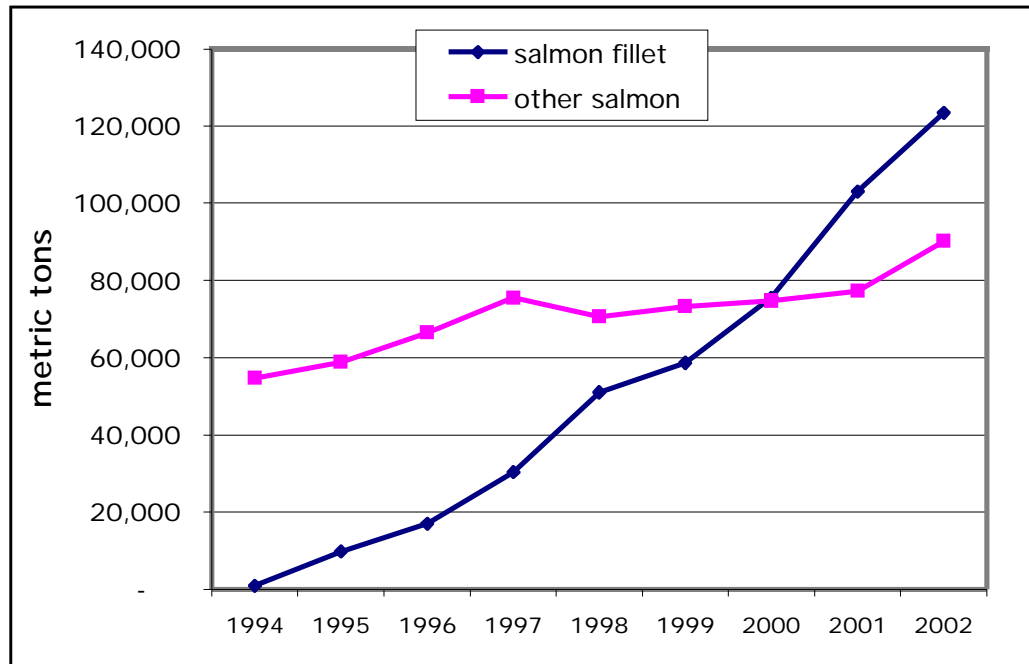
The U.S. salmon market is among the largest in the world and is growing at an average annual rate of 15 percent. At present, farmed salmon imports supply most of that market.

Virtually all the growth in U.S. salmon imports is in fillet products. U.S. imports of salmon fillets grew by more than 300 percent between 1997 and 2002, while imports of all other salmon products combined grew just 19 percent during the same period.

Frozen salmon fillets are a significant segment of the U.S. fillet market, and may represent a promising opportunity for Alaska producers. Frozen salmon fillets account for about 20 percent of U.S. fillet imports and that proportion has remained fairly steady since large-scale fillet imports began in 1995. As U.S. salmon fillet consumption grows, so does the size of the frozen fillet segment, which Alaska producers can access at far lower (waterborne) freight cost than shipping fresh fillets by air.

Despite the clear indication of product form preference, there has not been a significant increase in Alaskan salmon fillet production. Fillets still comprise less than 3 percent of statewide production volume. At the current consumption rate for fillet imports, Alaska produces only enough salmon fillets to supply the U.S. market for 12 days.

U.S. Salmon Imports 1994-2002 by Product Form



Source: National Marine Fisheries Service

Pouched Pink Salmon Products

There has been growing interest in manufacturing pink salmon products in pouches. One company successfully introduced a pouched pink salmon in the U.S. in 2002. Sales were reportedly brisk and buying patterns (single-unit initial purchase followed by multiple-unit purchases) suggest that consumers liked the product. Also significant is the fact that while the product was “slotted” adjacent to traditional canned salmon, there was no apparent erosion of canned salmon sales volume, according to a brand representative.

However, throughput capacity is a challenge for pouched pink salmon production lines. Longer processing time for pouches compared to traditional canning can be a limitation on the lucrative roe recovery process.

Both canned and pouched pink salmon products are sterilized by cooking under pressure in a retort. When the cooking process is complete, canned salmon can be promptly removed from the retort and cooled in water, making way for the next batch. But pouched products must be cooked *and* cooled in the retort. Removing pouches from the pressurized environment before they are cooled reportedly causes the pouch to swell and burst. The need to cool pouched products under pressure creates a bottleneck in throughput capacity, compared to traditional canned salmon.

That bottleneck is especially important given pink roe’s sensitivity to spoilage. Roe has comprised up to 20 percent of pink salmon’s first wholesale value in recent years. However, pink roe is more sensitive to age than other roe products. Bacteria growth and other factors cause the egg walls to deteriorate as the roe ages inside the

fish. If it is not removed and processed within 24 hours, eggs rupture during processing and the roe becomes worthless.

Any processing bottleneck that leaves roe in the fish beyond 24 hours reduces the value by up to 20 percent. Fish held beyond 24 hours are suitable for canned or frozen products, but the roe is lost.

Pouched salmon production lines can still be an important part of updating the region's pink salmon infrastructure, but are probably most appropriate as a means to augment existing canned salmon production lines and divert volume from traditional canned product, ultimately improving that market by decreasing oversupply.

Perhaps the best regional strategy for pink salmon production is to use freezing and pouch lines during the shoulder seasons, when volume is light and throughput limitations would not affect roe recovery. When harvest exceeds throughput of those lines, production would then be shifted to traditional high-capacity canned lines to maximize throughput and recovery of roe.

Another strategy is to sort the fish for sex upon arrival at the plant, sending females for immediate processing and holding males as necessary.

Ultimately, any infrastructure improvement that can divert volume away from the traditional canned salmon form will help reduce the oversupply situation for that product and ultimately improve the market.

"Micro" Markets

The combination of high-value species, widespread chilling, and proximity to US markets has led a growing number of Southeast fishermen and small processors to target small grocery chains, upscale markets and restaurants, and other small-volume purchasers in a variety of locations across the country. These sales are typically fresh fish, shipped only a day or two after harvest and delivered by air. In some cases frozen fillets, smoked fish and other specialty products are sold directly to consumers via catalogues or the Internet.

An advantage to this market strategy is that it allows producers to develop their own brands and relationships, thereby insulating them somewhat from swings in world salmon prices. A major challenge is how to operate efficiently on a small scale.

This is an area where public infrastructure – community-owned equipment, transportation links, generic marketing, regional branding, etc. – can clearly help. However, achieving a significant economic impact depends on the talents of a broad group of individual entrepreneurs exploiting somewhat idiosyncratic opportunities. For this reason, it is very difficult to predict how a regional "micro-market" strategy would fare relative to its cost.

Fish Waste

According to a recent study commissioned by the Juneau Economic Development Council, Southeast Alaska produces about 15,000 metric tons of salmon waste per year. Fish waste products being actively developed or considered for production in various parts of Southeast Alaska include: fishmeal, fish oil, hydrolyzates and compost. Many of these products have agricultural applications. The US is by far the largest producer of agricultural feed products, producing 143 million metric tons in 2002, more than twice as much as China, the second leading producer.²

- ♦ **Fishmeal** is a desirable ingredient in a variety of animal feeds, including feeds for farmed fish.
- ♦ **Fish oil** is used in animal feeds, human food production, and as a nutritional food supplement, among other applications. Historically, fish oil has been sold as a commodity and a substitute for vegetable oil. However, more and more fish oil is now used by the aquaculture industry, and it is considered a specialty oil. Some fish oil products compete in niche markets on the basis of purity, freshness and fatty acid content.
- ♦ **Hydrolyzates** are a concentrated form of fish protein produced through a controlled enzyme process and marketed as a highly nutritional animal feed additive, plant and agricultural fertilizer, and for other industrial uses.
- ♦ **Fish waste compost** must be made in combination with vegetable material such as sawdust, wood chips, brewery waste, or silage. Seaweed can also be used. The products of composting are plant fertilizer or soil amendments.

In some areas of the state, seafood processors are reaching the limitations of their National Pollution Discharge Elimination System (NPDES) permits. To expand production, these processors must find ways to reduce the proportion of waste they currently create.

² Bimbo, Anthony P., *Fishmeal and Oil Markets and Product Types*, 2003, Juneau Economic Development Council

ECONOMIC IMPACTS OF INFRASTRUCTURE PROJECTS

This discussion begins with an outline of several types of infrastructure projects, grouped according to the general mechanism by which impacts are likely to occur. The type of project is an indication of how it will interact with other existing and planned infrastructure to support economic growth. Following that is a discussion of how economic benefits may be distributed among people, businesses and communities dependent on the salmon industry. Finally, a mechanism for prioritizing projects according to their economic impact is presented.

Types of Infrastructure

An ice machine, a cold storage, or an innovative technology alone creates few economic benefits. Full value comes when the infrastructure functions as a link in a well-conceived production, marketing and distribution chain, as described earlier. A variety of regional chains already exist. Some remain effective; some are outmoded. New chains (production/marketing/distribution strategies) must be forged as markets evolve.

An infrastructure project may contribute to several different chains or only one, and this affects its potential economic impact. The types of infrastructure under consideration and their potential roles in creating economic impact include:

- ♦ **Expanded access to the resource.** Projects that either extend fishing seasons or increase the allowable catch have the potential to “increase the size of the pie.” However, expanded access to the resource will generate economic benefit only if conditions of over-supply are avoided. If they are, this type of improvement has potential for very broad impacts.
- ♦ **Better resource utilization.** Most proposals in this area involve fish waste utilization. They include both high- and low-tech strategies that could have both economic and environmental benefits. Economic benefits include revenue from sales and expanded opportunity to process high-value roe without incurring “wanton waste” penalties. Sex sorting is another approach to improved roe utilization.
- ♦ **New technology.** Technological improvements, particularly in processing, are being widely pursued. Results are inherently difficult to predict. New technology could include anything from waste treatment to pouch processing to airport navigation. In the study context, technology innovation is taken to mean relatively untried methods that may require subsidy to promote refinement and adoption.
- ♦ **Transportation.** Three approaches have been proposed. The first, *ongoing subsidy*, must be justified in terms of the leverage it provides to particular businesses to create regional value in excess of the subsidy. The second, *better efficiency*, includes several ideas for freight consolidation using existing carriers and also alterations to the regulatory environment to make it possible for existing carriers to serve the salmon industry better. The third approach, *new service*, involves mainly new marine or air service designed to meet salmon industry needs. This

could be intra-regional service to get product to regional hubs, or longer routes that would move product out of Southeast Alaska and as far as Europe or Asia.

Most transportation projects have relatively broad potential impacts. However, regional impacts may be limited by the size of project it is feasible for the SSSF to support.

- ♦ **Marketing.** Although marketing is the infrastructure gap most often mentioned by fishermen, the study team knows of no current proposals specifically concerned with improving the marketing capacity of the industry. Marketing infrastructure assets would be investments aimed at building lasting value in the marketplace; for example:
 - Developing marketing strategies and materials that help to establish a long-term regional brand
 - Building marketing capacity capable of serving multiple companies and interests (along the lines of ASMI)
 - Installing technology to assist the industry in identifying, developing and maintaining relationships with potential purchasers, such as computerized brokerage functions or buyer/seller matching.
 - So-called “platform” marketing wherein multiple producers market cooperatively through a common “platform” consisting of shared brand attributes. The attributes might include things like quality of wild fish, pristine environment, sustainable yield management, etc. Platform marketing resembles regional branding, but explicitly involves pooling resources among a defined group of participating producers. The producers retain their individual positioning strategies and marketing mix but craft them and define them in the context of the shared marketing “platform.”

Promotions and advertising tend not to be infrastructure, since they don’t represent an asset in and of themselves, but rather a one-time activity or expense. Promotions and advertising could be elements in an effort to build regional brand value. Again, however, no proposals along these lines have been identified.

Effective marketing must have both broad-based and highly focused components. Typically, the broader the target market or range of products, the more expensive the marketing effort. National advertising campaigns, for example, may cost hundreds of millions of dollars and take several years to yield results. Even then, advertising is only productive if the means to meet the new demand – production and distribution – are in place.

- ♦ **Production/Cold Storage Facilities.** Most communities historically dependent on fishing see community or cooperative operation of cold storages and production lines as a way to promote market innovation and give local fishermen more options to profit from their harvest. Cold storages can lengthen seasons, promote year-round employment, lower shipping costs, and facilitate access to new markets for more volume and higher prices.

Impacts from this type of project may be highly localized unless the effort is part of a region-wide strategy. Production equipment must be matched to the target market(s) and integrated with marketing and distribution strategies.

Management structures must be in place to ensure equitable and effective operations.

- ♦ **Fleet Support.** Assorted location-specific smaller projects such as cranes, gear storage, marine ways, and drive-down dock access could make salmon production easier and, possibly, cheaper. This type of infrastructure supports many different production/marketing/distribution strategies. However, region-wide improvements in fleet support do not currently appear critical to any particular strategy.
- ♦ **Quality Enhancement.** There is general agreement that a regional salmon strategy needs to be based in part on a guarantee (branding) of high quality. Individual pieces of equipment that can help accomplish this include ice machines and on-board chilling systems, pinbone removal machines, and blast freezers. When coupled with other infrastructure, these have the potential to add broad-based value to the harvest.

Distribution of Economic Benefits

Each type of infrastructure project offers a different distribution of potential socio-economic benefits among affected groups, including fishermen, processors, support businesses, and communities. Projects may have short-term or long-term economic benefit, affect smaller communities versus large, create new jobs rather than additional income for those already employed, and precipitate greater or lesser indirect economic benefits outside the salmon industry.

Who Would Benefit?

Benefits of infrastructure improvements would accrue to those in the salmon industry and outside it. In general, this consists of three groups: harvesters, processors, and communities (including fisheries support businesses).

Harvestors (permit holders) and their crews: For this group, the most direct benefits would come from projects that increase the value of fish sold to buyers (ex-vessel value). Most categories of projects (new technologies, quality improvement, transportation, etc.) have long-term potential to increase income to fishermen. Projects providing opportunities for fishermen to enhance the quality of their harvest (ice machines, chilling systems) have the greatest near-term potential to increase fishermen's income. Similarly, projects that support full utilization of the salmon resource, without resulting in oversupply and even lower prices, could increase direct income to fishermen.

Projects that reduce costs incurred by fishermen could have the same impact as higher prices. Fleet support projects would be most likely to reduce costs.

Since most crew are paid on a percentage basis, any measure that increases gross earnings for permit holders will result in increased income for crew as well.

Processors and their employees: Established processors are well-positioned to leverage the impacts of an infrastructure project through established production/marketing/distribution chains. For the same reason, they may feel less

incentive to invest resources in innovation and new market strategies that promise more long-term results. Direct benefits to processors may best be measured by first-wholesale value.

For the large processors in Southeast Alaska, improved transportation infrastructure likely offers the most immediate economic benefit. Additional capacity to move fish to market quickly could increase the proportion of the harvest that is sold in the higher-value fresh market.

Increased local freezer capacity could also bring economic benefit to processors. Increased freezer capacity could foster higher production levels as well as longer processing seasons (freezing and storing for additional processing in the off-season).

Improved transportation infrastructure and increased freezer storage capacity both have the potential to benefit fishermen as well as processors. To the extent that additional freezer capacity results in less need for trip limits, fishermen could enjoy greater income.

Freezer and cold-storage capacity that is broadly available could encourage more fishermen to process their own catch. The extent to which this realizes economic benefits depends on how effectively the resulting products can be marketed and distributed.

Communities: Communities with some degree of dependence on tax revenues associated with local salmon landings can benefit from projects that bring more fish to local processors or projects that result in high ex-vessel salmon values. Communities will also benefit from economic stability that results from projects that create additional jobs or extend the term of seasonal jobs.

Fisheries support businesses by and large benefit in proportion to fishermen and processors. However, the type of support required may change depending upon the technologies and strategies involved.

Communities are, by definition, tied to a single geographic location. Infrastructure investments play an important role in determining the strategic value of particular locations in different production/marketing/distribution chains. By extension, the nature of existing chains helps determine the relative impacts of infrastructure investment in one community versus another.

Economic Impact Criteria

The preceding discussion conveys the message that different kinds of infrastructure projects will benefit different groups in different ways, over different time periods. This distribution of benefits is an important consideration in prioritizing infrastructure projects. The obvious complexity of the situation suggests one guiding criteria for infrastructure investment.

In general, economic benefits will be greatest when infrastructure serves a variety of entrepreneurs and businesses. This might be termed a “Darwinian” approach to infrastructure development. That is:

Projects that provide broad rather than narrowly targeted opportunities support evolution of multiple production/marketing/distribution strategies. This is likely to lead to the best match between regional or local strengths and market needs in the long term. This is especially true when specific regional strategies have not yet been identified or refined.

Transportation and cold storage are examples of broad projects capable of supporting a variety of products and market strategies. Processing and handling equipment specific to particular products would be more narrowly targeted.

Promoting evolution of new strategies is particularly important when market demand is in rapid flux, as it has been over the past decade. However, it is also important to have more specific tools to prioritize projects among and within each class of infrastructure. Following are some specific economic impact criteria that could be used to prioritize projects:

Harvesters

- Will the project result in a higher price paid (on a per pound basis) to fishermen? How much of a price increase can be realistically expected?
- Will the project result in an overall increase in total ex-vessel (gross) revenue earned by fishermen (through fuller utilization, for example)? How much of an increase can be expected?
- Will the project reduce the cost of doing business for fishermen? How much of a cost decrease could be expected?
- How many Southeast Alaska fishermen could benefit from the project?

Processors

- Will the project increase the first wholesale value (on a per pound basis) of salmon products shipped out of the region (the value of salmon as it leaves Southeast Alaska)? How much of a first wholesale price increase can be expected?
- Will the project result in an overall increase in total first wholesale value of salmon products produced in the region (through increased throughput capacity, for example)? How much of an increase can be expected?
- Will the project reduce the cost of doing business for processors? How much of a cost decrease could be expected?
- How many Southeast processors would benefit from the project?

Communities

- Will the project result in more fish being landed locally, resulting in additional raw fish tax revenues? If so, what increase in volume and revenue is expected?

- Will the project result in increased employment and income opportunities for local residents (this could include a project that provides a local market for fish that could otherwise not be sold locally)? How many new jobs will be created? How much additional income for local people will be created?
- Will the project add economic stability through off-season employment opportunities?
- Does the project support a community that has experienced significant economic downturn as a result of past loss of seafood infrastructure or, in general, declines in the salmon industry?
- What alternatives does the community have to address the issues, other than the proposed project?
- Is there a clear private sector demand for the project?
- Is the project self-sustainable over the long-term?
- Does the project benefit more than one community?

Indirect Benefits

- Will other sectors of the seafood industry, or non-seafood-related business and industries, benefit from the project?
- Are the economic benefits of the project directed primarily at residents, or will a significant share of the benefits leak from the regional economy (as a result of non-resident ownership of permit or processing facilities)?

Measuring Economic Benefits

While it is a relatively simple task to identify the criteria that should be used to rank or prioritize infrastructure projects, the greater challenge is actually quantifying the impacts of a project. Infrastructure projects by their nature often have direct economic impacts. An ice machine in a rural community, for example, could lead to improved fish quality which could lead to higher prices paid for fish, both at the ex-vessel and first wholesale level. But predicting that price increase and the overall increase in income to fishermen and processors would be highly speculative. Similarly, a cold storage facility, beyond creating the few jobs needed to manage and maintain the facility, could result in higher production volumes and greater opportunity for value-added processing by fishermen and processors. This in turn could result in greater income to fishermen and processors. Again, measuring the increase would be very difficult.

Beyond the challenges associated with measuring economic impacts of infrastructure projects, it is also important to have realistic expectations of the impacts infrastructure projects can have on the region's "salmon economy." The value to fishermen of Southeast Alaska's salmon harvest declined from \$127 million in 1994 to \$40 million in 2002. The loss of nearly \$90 million in value is the result of worldwide shifts in the salmon market (a shift driven primarily by farmed salmon).

No amount of investment in infrastructure in Southeast Alaska can compensate, economically, for such fundamental shifts in the market. For example, suppose a group of infrastructure projects results in a 5-cents-per-pound increase in the average price paid to fishermen for chum salmon. Such an increase would be a highly successful impact from infrastructure investment (a 30% increase in price compared to the 2002 price of 18 cents per pound). Yet such an increase would yield about \$3 million in additional income for fishermen – a significant benefit to fishermen but modest compared to the \$90 million loss suffered by fishermen. The intent of this discussion is not to dismiss the potential benefit of investment in infrastructure, but to establish realistic expectations about the scale of potential benefits.

Recommendations

The business plan for any proposed infrastructure project is the appropriate place to make the case for the project's expected economic impact. The business plan details the ownership structure for the venture. It describes the economic and market environments and why the project makes sense in those contexts. It quantifies the sources and uses of funds for the project, including direct employment and local spending that will be generated. Finally, it provides, or should provide, a dispassionate assessment of the strengths and weaknesses of the management team and the critical issues likely to affect success or failure of the project.

The business plan provides, then, two of three critical elements for assessing potential economic impacts:

1. Employment, spending, and tax revenues to be generated
2. The information necessary for SSSF evaluators to assign a probability of success to the project.

The third critical element consists of who will benefit. This must be assessed by the evaluator based on knowledge of the industry and region, as well as information in the business plan. The most challenging piece of this third element is understanding how the new infrastructure will interact with other elements in the production chain to create economic benefits across businesses, communities and the region.

Evaluation Matrix for Economic Impact

The tables on the following page are simple tools for comparing economic impacts of infrastructure projects. The first table develops an estimate of the potential scope of economic impacts. The second table helps assess how each of the three main categories of impact – employment, local spending, and taxes – is likely to affect the main groups of beneficiaries – harvesters, processors, support businesses, communities, and the region as a whole. Both tables incorporate a factor for the probability that the project will succeed in reaching its goals. The evaluator must estimate probability of success based on all available information about the project, its markets, other financing, management team, etc., whether presented in the proposal or obtained from other sources. With the exception of probabilities, Requests for Proposal to the SSSF could be structured to collect the specific information necessary to complete the tables.

Matrix 1

Matrix 1 helps estimate overall scale by looking at the size of the market(s) affected by the proposed infrastructure, the market share currently controlled by Southeast Alaska producers, the gain in market share (or cost savings) expected from the infrastructure, and the probability of success. Thus, if the infrastructure is machinery used to produce fresh fillets, the overall market – purchasers of fresh fillets within shipping distance of Southeast Alaska – is very large. However, the impact of a single processing line on overall market share will be small. If the project is intended as a technology demonstration, the potential impact on market share might be larger (if the equipment is eventually adopted by multiple producers). However, the probability of capturing that larger share would in all likelihood be lower than the probability of success for a single installation, because there would be much more uncertainty involved.

As noted throughout this report, the number of factors involved in accurately assessing infrastructure impacts is clearly large. The intent of Matrix 1 is simply to help evaluators assign orders of magnitude to the impacts of various types of projects.

Matrix 2

Matrix 2 helps evaluators understand how the main economic impacts are likely to be distributed among the major beneficiaries of a project. It is intentionally general so that evaluators can adapt it to the many different potential types of infrastructure projects. For some projects, the matrix may be used to develop quantitative estimates. That is, where information is available, dollar amounts of income, spending and taxes may be summed and multiplied by a numerical impact factor. In other cases, it will not be possible to quantify impacts with confidence and comparisons must be made qualitatively, for example by assigning ratings of “high,” “medium,” and “low,” to the various impact cells.

Here again, no single table can capture the full range of economic implications for a complex, or even relatively simple, project. Matrix 2 is a way for evaluators to organize their approach and to ensure that key impacts are not overlooked. It is not so much the “answer” provided by the table, as the process of reaching it that is likely to be useful.

Matrix 1 – Comparing Scale of Economic Impacts among Projects

	Size of Targeted Market	Current Southeast Alaska Market Share	Expected Share Gain or Cost Savings from Project	Probability of Success	Impact Estimate
Project A					
Project B					
Project C					

Matrix 2 – Estimating Distribution of Economic Impacts of an Individual Project

	Harvesters	Processors	Support Businesses	Community	Region	Total	Probability of Success	Impact Estimate
Employment Income								
Local (SE Alaska) Spending								
Tax Revenues								

THE ROLE OF GOVERNMENT IN PROVIDING SALMON INFRASTRUCTURE

Basis for Public Investment

Infrastructure

In a broad sense, infrastructure is any capital asset. A capital asset is one that provides benefits over a period of time longer than one year. Capital assets may be tangible, such as a fish processing plant, or intangible, such as a patent for a processing technology.

The value of most capital assets is reduced in the process of producing goods or services. They may lose their value through physical wear, tear, and depreciation or technical obsolescence. Changes in market supply and demand can increase or decrease the value of capital assets.

Producers incur the cost of capital assets in advance, but receive their benefits over time. Thus, they often need a source of funds — beyond those provided by current sales of goods or services — to acquire capital assets.

Role of Financial Markets

Private financial markets will supply the initial money, provided employment of the asset can be shown to generate revenues in excess of costs. Private markets may provide funds in the form of debt, equity, or some combination. Private financing may use a myriad of structures to balance perceived risk with expected return. These include collateralization, reserve funds, loan guarantees, letters of credit, preferred stock, and other structures. Financing structures are limited only by the imagination of the parties involved, the economics of a project, and the creditworthiness of borrowers.

If private markets will finance infrastructure, there is no need for the use of public funds. Indeed, public financing can increase the risk of bad investments being made. Public bodies may have political, social, or bureaucratic agendas that can subvert sound financial decision-making. Corruption is also a greater risk when decisions are not driven by the bottom line. One of the guiding principles for public infrastructure investment is, therefore:

In general, an infrastructure project should demonstrate that private financing is not available, in order to be eligible for public funding.

Public Goods

Often, what we think of as infrastructure are capital assets that produce public goods. A public good is a good or service that, if supplied to one person, can be supplied to another person at no extra cost. An example is a dock. The clearest public goods are those that benefit the most people, for example clean air or public defense. The highway system is clearly public infrastructure. At the other extreme, infrastructure that directly benefits only one user, generally a for-profit entity, can be termed commercial infrastructure.

Financing Public Goods

In many cases, prices could be charged for public goods sufficient to permit private financing of the capital asset. Certainly, this can be done with docks. But, charging a price reduces use of the public good, without any offsetting reduction in the cost of providing it. Thus, charging prices for public goods reduces the total benefits that can be squeezed from the capital asset.

Provision of public goods is a key role of the public sector. To maximize the use and benefits of public goods, the public sector will own or finance the capital assets that produce them. Ideally, government will charge, or require to be charged, little or nothing for the use of infrastructure. When benefits are very broad, the cost of the capital improvement is often paid from general government revenues. Where benefits are somewhat less broad, taxes or fees may be levied on the beneficiaries of the public good, but without regard to their use of any particular facility. An example would be the use of marine fuel taxes to build a dock. Finally, where benefits are even more concentrated, fees such as ferry fares and bridge tolls may be charged on a per-use basis.

Thus, public goods are an exception to the rule that the public sector should defer to the private sector when private financing is available. Rather:

The public sector should assume the role of providing public goods whenever total benefits (to society) exceed the costs, regardless of the availability of private financing.

However:

Public goods that receive broad use are more clearly appropriate for public funding from general revenues than those that directly benefit a relatively small group of users.

Research and Development

Research and development is an activity used by both the public and private sectors to create new infrastructure. For example, a processor might be willing to fund research to develop specialized processing machinery in order to obtain exclusive rights to that machinery by means of a patent. For a specified period, patent rights convert what would be a public good — a successful, cost-effective design — into a private good, and a monopoly at that. A patent (and private development in general) enable a business to restrict access to infrastructure, thereby reducing, at least temporarily, the total benefits that may be generated by the infrastructure.

In contrast, if funded by government, the successful design would immediately function as a public good. It could be provided to all processors at no extra cost, with potentially substantial benefits to the industry and region as a whole. This creates a strong rationale for government funding of research and development.

However, government needs to exercise caution when stepping into commercial research and development. The question of whether research and development is best accomplished through public or private investment is complex and the answer may differ from project to project. Patent rights may provide sufficient incentive for private investment in commercial research and development and at the same time create significant public benefit in terms of employment and other economic activity.

Where benefits are clearly maximized by channeling research and development toward a public good, government funding may be appropriate. However, government must be attentive to two main concerns. First, removing the patent incentive should not have the effect of stifling effective commercial application of the product. Second, if research and development are publicly funded, benefits of the product should not be allowed to accrue to a small group of users. In general:

If government funds research and development by or through private enterprises, it normally should require that the results remain in the public domain.

For-Profit and Not-for-Profit Entities

The private sector consists of both for-profit and not-for-profit entities. Under the right circumstances both types of entity may develop or maintain infrastructure that benefits the public. However, both for-profit and not-for-profit corporations have priorities and incentives that may not align with the broad public interest. Neither should be expected to advance that interest except as the individual entities involved are prepared to adopt and be accountable for specific public goals.

Not-for-profits are particularly complex in this regard. Whereas for-profit corporations may generally be assumed to place a priority on maximizing returns to shareholders and/or management, every not-for-profit is created to advance a unique agenda (mission), which is described in the organization's bylaws. The function of the not-for-profit's board of directors is not, as some might assume, to ensure that the organization acts in the public interest. Rather, the board is charged with a number of specific management oversight responsibilities and with seeing that the organization pursues its mission, whatever that may be.

Not-for-profits may be created to benefit a narrow range of individuals -- dog-owners, for example -- or, even to assist and support a single person, such as an artist or scholar. Community-based not-for-profits, not surprisingly, tend to be concerned with the public interest primarily as it relates to their particular community. The point is simply that:

Achieving public goals through private entities, regardless of whether they are structured as for-profit or not-for-profit, requires careful financial structuring, contracting, oversight, and evaluation.

Ventures vs. Infrastructure

The distinction between ventures and infrastructure is an important one. Infrastructure, as noted above, consists of one or more capital assets having a defined useful life in some reasonably well-understood application. A venture is the implementation of a business strategy. A venture may depend on certain capital assets to succeed. However, if the assets have value only in the context of a successful venture, there may be a high risk that they will not serve as infrastructure. Further, ventures may require unforeseen infusions of capital to realize their market potential. Infrastructure normally has relatively predictable capital requirements.

The best infrastructure investments will have a useful life – that is, will be capable of providing value to the region – beyond the success or failure of a single venture. Assets employed in ventures tend to provide value relatively quickly if the venture succeeds, or not at all. For example, British Columbia decided to replace aging ferry vessels by creating a shipbuilding entity and constructing highly specialized, somewhat experimental vessels. The shipbuilding venture improved the economic impact potential of the project in the eyes of the BC government. However, it also transformed an investment in ferry infrastructure into a high-risk, high-stakes venture that turned out to be extremely costly.

The challenges of creating economic development by means of ventures have led to the birth of highly specialized entities known as community development venture capital funds. The experience of these funds over the past three decades or so makes dramatically clear that a high level of financial, legal, evaluative, and, not least, specific industry expertise is needed for a reasonable expectation of success.

Channeling public funds into venture investments may also be doomed to failure because of insufficient diversification. A group of investments limited to one particular industry is vulnerable because any downturn affecting the industry is likely to affect all the investments. In addition, the regional geographic concentration of investments can hurt diversification. Finally, a fund may just be too small to finance an adequate number of investments to achieve diversification.

Given the risks of venture investments:

Public support of infrastructure development should give priority to projects that do not require the financial success of an individual venture in order to realize an acceptable level of public benefits.

Implications of Region-Wide Planning

A region-wide industrial development plan for the salmon fishery would make it easier to distinguish between capital assets relevant mainly to a single venture and those of potentially broader use.

Government Subsidy vs. Government Welfare

Finally, whether public infrastructure is provided directly by government or contracted through private corporations, the value of the public good resulting from a subsidy ideally should exceed its cost. The political decision has been made to appropriate funds to Alaska for salmon projects. Use of the funds to subsidize the salmon industry will, therefore, provide greater benefits to the regional economy than leaving them unspent. The challenge to the fund is to see that the boost to the regional economy is not accomplished simply at the expense of the national welfare as a whole. Therefore:

Public funding of infrastructure projects is most desirable when it can be demonstrated that the value of the funding will be leveraged by specific local resources, knowledge and skills, and by sustained local initiative.

Alaska Infrastructure Development Projects

Infrastructure development projects have had mixed success in Alaska. Federal, State, and municipal governments have attempted development in a variety of industries and on a variety of scales. Projects currently in operation include the Red Dog mine, the Alaska Railroad, and various hydroelectric and salmon aquaculture projects.

Struggling, closed, or failed projects include the Delta barley project, Seward grain terminal, Point MacKenzie dairy farms, Skagway ore terminal, Seward coal facility, Healy coal-fired electric plant, Ketchikan vessel repair facility, Ketchikan and Sitka pulp mills, Ketchikan pulp mill conversion to a veneer plant, and an Anchorage seafood processing facility.

A number of major projects such as the Susitna Hydroelectric Project, ALPETCO oil refinery, and Alaska gasline — now the goal of the Alaska Gasline Port Authority created by the Fairbanks North Star Borough, the North Slope Borough, the City of Valdez, and the All-Alaska Gasline Authority (a public corporation of the State) — never got, or have yet to get, off the ground because of the scale and risks involved. So far, governments have not judged the public benefits of these projects to outweigh the costs of subsidies required to make them feasible.

The Alaska Industrial Development & Export Authority (AIDEA) has financed many Alaska development projects. Hydroelectric projects have been the responsibility of the Alaska Energy Authority (AEA), now managed by AIDEA. Municipal governments financed a few projects, such as the Ketchikan pulp mill conversion, a beneficiary of the Southeast Alaska Economic Disaster Fund.

Commodities

Many Alaska development projects were created to facilitate production of a commodity, either through resource extraction, such as mines; sustainable production, such as agriculture; or secondary processing, such as the pulp mills.

Commodities can be subject to major swings in prices, due to cyclic demand changes or competition from increased supplies.

The Skagway Ore Terminal, Seward Coal Facility, and Ketchikan and Sitka pulp mills all are projects that operated successfully for many years. Private companies originally developed them – but their original or continued operation was dependent on government assistance.

The pulp mills' feasibility hinged on subsidies provided by the Federal government. First, Federal law subsidized feedstock prices with a prohibition on round-log exports from the Tongass National Forest. Later, the Forest Service subsidized the cutting of timber with credits for road construction.

After initial private operation, the State stepped into the Skagway ore and Seward coal projects to renew or extend the operation of mines using these facilities. These projects and the pulp mills are now closed largely because of erosion of the commodity price.

These projects highlight government actions that were successful in providing operation or extended operation of industrial activities. Whether the net benefits exceeded the costs is beyond the scope of this report. But, they suggest the importance of relying upon private enterprise for making key development decisions.

Agriculture

By way of contrast, the Delta barley, Seward grain terminal, and Point MacKenzie dairy farm projects were largely the handiwork of government officials. The State's unprecedented oil wealth induced quixotic attempts at jump-starting agricultural development through hoped-for efficiencies of cluster economics and mega-scale operations. The fact that these projects never achieved a significant level of operation suggests that private enterprise is much more hard-headed when analyzing project feasibility.

The vision of the Delta barley projects was to develop production on such a scale as to "provide sufficient amounts of grain to make marketing and transportation to markets cost effective."³ Although 87,000 acres were sold by the State, only 6,500 acres were in production in 1986, down from a high of 16,000 acres.

The projects were targeted at international markets, as well as in-state. The in-state markets were primarily Matanuska dairy farms, eventually to be augmented by new herds at another State development project, the MacKenzie dairy project.

The Delta barley projects and the Seward grain terminal were victims in part of depressed commodity prices: "...Declines in grain prices worldwide have contributed to the reduction in acreage in production."⁴ The Achilles heel of these projects was that costs of Alaska production were too high to weather any period of depressed prices. Either the State accepted unrealistic feasibility assessments or too

³ "The Economics of Barley Production in the Delta Junction Area of Interior Alaska", Lewis, Carol E., Edward L. Arobio and Cathy A. Birkliid, *Bulletin 77*, Agricultural and Forestry Experiment Station, University of Alaska Fairbanks, October 1987. Ibid.

⁴ Ibid.

much risk of variation from the projected feasibility. In early 1987, barley was selling for \$100 per ton in Delta, but costs had averaged \$158 per ton during 1983–85. After adding on transportation costs, Delta barley was even less competitive, either in in-state or international markets. Without export markets, the Seward grain terminal became a white elephant, never operated.

The major in-state market for Delta barley — the Point MacKenzie dairy farms — itself fell victim to low commodity prices. The farms' milk could not compete with milk shipped in from low-cost producers outside Alaska. In 1997, Matanuska Maid, an Anchorage milk producer, paid 14 percent more for Anchorage-area milk than for Seattle milk. The State had acquired Matanuska Maid in 1985 in bankruptcy court in a vain attempt to keep an Alaska dairy industry afloat. But in 1997, the five Matanuska dairy farms were only 7 percent of the number that existed in 1958.⁵

These development examples point out Alaska's weakness in relying on production and export of resources largely in the form of commodities. A commodity is a product that has standardized attributes. Commodities are often raw materials or foodstuffs. There may be recognized grades, product sub-types, or technical specifications, but within such categories, the product is more or less indistinguishable from one producer to the next. Even value-added products can have elements of a commodity nature in the absence of a technological advance like pinbone removal or roe separation. One brand of canned pink salmon is more or less the same as another.

The more that processing can create unique and valued attributes for a product, the more a producer can insulate its products from commodity price swings. Efforts to produce more heterogeneous, highly valued salmon products can help minimize the risks of relying on commodity markets. These efforts include premium quality fresh and frozen salmon and convenience or gourmet prepared salmon products.

Transportation Costs

The Delta barley and Seward grain terminals, the Skagway Ore Terminal, and the Seward coal facility all succumbed to commodity price pressures in part because the commodities bore substantial transportation expenses to reach their markets. The relatively fixed transport costs exerted powerful leverage on the prices to the producers. A given percentage decline in the commodities' market price translates, after deducting fixed transport costs, into a much greater percentage decline in the farm gate or mine mouth price. Thus, a buffer in a producer's operating margin that might be reasonable elsewhere can quickly evaporate for remote producers in Alaska.

The Red Dog mine provides an example of a successful government infrastructure project where transportation was a major cost factor. AIDEA has invested almost \$267 million to date in the road and port—the DeLong Mountain Regional Transportation System—that serves the mine. The operator of the mine, Teck Cominco Alaska Inc., pays for the use of AIDEA's road and port through a toll fee.⁶

⁵ "A Special Report on the Department of Natural Resources, Division of Agriculture, Matanuska Maid", Alaska Division of Legislative Audit, Audit Control Number 10-4545-98, September 30, 1998.

⁶ "DeLong Mountain Regional Transportation System Project Fact Sheet", AIDEA/AEA, January 22, 2003.

The toll fee is a subsidized fee. The fee only has to cover the reduced interest rates of tax-exempt bonds and a below-market rate of return on AIDEA's equity contributions. The State of Alaska initially shared some of the project's risk by allowing Cominco's payments on behalf of AIDEA's equity contributions to be contingent on the price of ore exceeding a particular threshold.

Business Users

A project can have a high likelihood of success if a strong business stands behind it with a major financial commitment.

Red Dog Mine

The Red Dog owes part of its success to the fact that it is the largest and one of the richest zinc deposits in the world. The NANA Regional Corporation's selection of Cominco as the mine developer and operator also contributed to its success. This was a company with successful arctic mining experience in Canada. It had the necessary managerial and financial resources.

The Red Dog project is an illustration of how subsidizing transport costs can work when done in conjunction with an experienced private developer that is making a large commitment to an economically advantaged project.

Federal Express Aircraft Maintenance Facility

Another success is AIDEA's Federal Express Aircraft Maintenance Facility at Anchorage International Airport. It allows Federal Express, which has an international package sorting facility at the airport, to perform line maintenance on their fleet of 747 aircraft operating through Anchorage.

Federal Express signed a 20-year lease with AIDEA for use of the facility. The facility is not infrastructure in the sense of a public good. Only Federal Express will be able to use the facility.

Private investors might well have financed the facility. The main rationale for AIDEA's involvement was to take advantage of the Federal interest rate subsidy on tax-exempt bonds. Nevertheless, the project points up how a creditworthy major user helps ensure a project's success. It also demonstrates how a project that supports an established, successful business can build on strength.

Gateway Forest Products

A contrasting example is that of Gateway Forest Products. Gateway purchased Ketchikan Pulp Company's (KPC's) former pulp mill assets in Ketchikan to develop a veneer mill. This project could be considered infrastructure in the broad sense — but it is not a public good. Rather, the capital assets were commercial business property employed for a business venture.

The Ketchikan Gateway Borough assisted Gateway with a series of three loans, totaling \$15 million. Still, the business went under. The Borough spent another \$2 million to purchase the mills' assets and absorbed \$320,000 in back taxes.

The veneer was a start-up business. It was unproven. The plant opened for business in January 2001. One month later, Gateway filed for bankruptcy. The Borough filed a lawsuit in November 2002 against Gateway. The lawsuit suggests that the company's equity totaled \$1 million at best. Gateway's bankruptcy filing indicated \$45 million in debt. It appears that the company was grossly undercapitalized.

The lawsuit also raised questions about the credibility of Gateway's representations to the Borough. The Borough alleges that a restrictive covenant prevented it from obtaining an independent expert review of Gateway's feasibility study. The Borough also contends that a person with undisclosed conflicts of interest affirmed Gateway's due diligence report.

In short, this project was inauspicious from the start. It was not just a start-up business, but a product new to Alaska in a highly competitive, largely commodity-driven industry. The lead actor was a woefully undercapitalized company whose credibility has been questioned.

Alaska Seafood International (ASI)

This is a business venture designed to put into practice much of the conventional wisdom for injecting new vigor into the Alaska seafood industry — value-added ready-to-eat products, a focus on fresh and frozen as opposed to canned seafood, proprietary processes to enhance flavor and extend shelf life of fresh seafood, a location (at Anchorage International Airport) providing transportation advantages, ready access to new markets, state-of-the-art equipment, and a large plant with economies of scale.

Unfortunately, the project appears to have been grounded in wishful thinking and political appeal rather than hard-headed business decisions backed by substantial commitments from established firms. ASI generated lots of excitement, support, and even partisan competition within the State legislative and executive branches. A successful project that by all appearances would be a watershed for the Alaska seafood industry promised substantial political capital gains to those who could claim credit.

The developer consisted of an individual entrepreneur, private investors and a Taiwan investment company, rather than an established processing firm. A major existing firm would have had the advantage of an established sales channel for its products. Of course, established companies are often content to rest on their laurels; new entrants to an industry can be essential to revive it. But, great care must be exercised to ensure the entrant has the expertise and financial strength to realistically plan and carry out a business venture. The project had strong opposition from other seafood processors. They argued that it was unfair for the State to be competing with private industry.

A detailed post mortem is beyond the scope of this report. But, the fact that the plant has operated intermittently and has gone through three restructurings of its finances to inject additional capital in its three years of existence suggests gross under-

capitalization and a starry-eyed business plan. In 2002, AIDEA wrote off \$25.6 million of the asset's \$48 million fair value on its books.⁷ Current management expects the ASI plant, now using 20 percent of the overall facility's space, will never use more than 40 percent, even though the space is rent-free to ASI.⁸

KTUU Channel 2 in Anchorage quoted Professor Gunnar Knapp, a University of Alaska fisheries industry specialist, as saying, "So far, the problem appears to be value-added is cost-added also. More value-added doesn't necessarily mean more profitable."⁹

Summary of Business User Examples

The most important lesson of the Gateway experience is that generally governments are ill-advised to substitute their judgment for that of the private capital sources in financing commercial ventures. The Federal Express project suggests that government agencies with development expertise and disciplined procedures can prudently assist in business financing. But, the Alaska Seafood International project shows that even a specialized State development agency can get carried away with developmental and political enthusiasm. In summary:

The greater a project's reliance on public financing or subsidies, the greater is the degree of prudence that must be exercised. Prudence becomes absolutely critical when a project serves one user, as in the case of these commercial infrastructure examples.

Technology Demonstration

The Healy Clean Coal Project (HCCP), a technology demonstration project, proves the importance of a technology's economics. AIDEA owns the \$297 million project. HCCP was funded with a \$117.4 million U.S. Department of Energy grant, a \$25 million State grant, and \$85 million in AIDEA bonds.¹⁰ The project was designed to demonstrate clean coal burning technologies, but was also expected to be an operating generating plant for Golden Valley Electric Association (GVEA). GVEA signed a 30-year power purchase agreement. The plant was designed to burn coal from the Usibelli coal mine.

After completion and testing of the HCCP, AIDEA found that the technology met its technical and environmental objectives. Unfortunately, GVEA decided that the operations and maintenance costs, reliability, and safety of the plant were unacceptable. As a result, the plant has been in mothball status since December 1999. AIDEA is bearing a \$9 million a year drain on its resources to pay debt service and maintenance while the plant sits idle. After litigation, AIDEA released GVEA from its power sales agreement. AIDEA is pursuing funding for a retrofit and new power sales contracts. In 2002, AIDEA wrote off \$66 million of the asset's \$122 million fair value on its books.¹¹

⁷ "AIDEA Annual Report 2002", Alaska Industrial Development & Export Authority.

⁸ "Slimmed-down Anchorage seafood plant finds customers", Tim Bradner, *Alaska Journal of Commerce*, March 31, 2003.

⁹ "Reviving the Great Alaska Seafood Company", Jeffrey Hope, October 14, 2002, The Bottom Line, KTUU.COM, accessed at <http://www.ktuu.com/features/bottomline/101402.asp>.

¹⁰ "Healy Clean Coal Project Fact Sheet", AIDEA/AEA, January 22, 2003.

¹¹ "AIDEA Annual Report 2002", Alaska Industrial Development & Export Authority.

GVEA is now looking at adding two 40-megawatt power plants to its North Pole facilities and has retrofit its older coal burning plant adjacent to HCCP with conventional pollution control technology that it believes is as good as HCCP. Even if successfully retrofitted and placed in operation, HCCP may produce power at a cost that can only be labeled a waste of taxpayers' dollars.

HCCP demonstrates the risk of treating technology demonstration as a business proposition. AIDEA's cash drain hurts other projects that could otherwise be funded. It may be better, at least in some cases, to confine public funding for technology demonstration to grants. All other things being equal, this would require the private investors to shoulder a greater amount of the financing and risks. At the very least, the experience suggests greater care is needed in crafting the obligations of the private parties should technology not prove out.

The experience also suggests that in this case decisions about new technology might have been better left to the private sector, under the guidance of government pollution control standards or markets for pollution credits. The Federal clean coal program raises the question of whether it is an inefficient means toward the goal of cleaner air. Even where successful, clean coal projects may amount to little more than subsidies to the coal industry and electric consumers. Some of these projects may have been funded anyway.

Unless government is prepared to justify the cost purely in terms of the knowledge gained, funding technology demonstrations should be undertaken after other means or incentives for encouraging private adoption of best practices have been explored.

Import Substitution

The development of the Ketchikan Shipyard is an example of import substitution attempted by the government. The project is commercial infrastructure, not a public good. The Alaska Department of Transportation & Public Facilities (DOT&PF) spent approximately \$38 million to construct the yard in the 1980's. The yard was built to provide maintenance for Alaska Marine Highway System (AMHS) vessels. Operation of the shipyard was leased to a series of private contractors through the City of Ketchikan.

The State justified the project as a way for AMHS to save money. But, the main impetus was regional political pressure to foster in-state economic development by replacing maintenance services then performed out-of-state.

The shipyard has experienced financial and operational difficulties. It was closed by DOT&PF for two years in 1991. AIDEA took ownership of the shipyard in 1997. Under AIDEA, a \$40 million development plan was prepared to increase shipyard capacity and efficiency and improve services. The goal is to create a commercially viable operation and increase employment. The Ketchikan Gateway Borough and Federal government have each contributed about \$2.6 million towards the development plan so far.¹²

¹² "Ketchikan Shipyard Project Fact Sheet", AIDEA/AEA, January 22, 2003.

Whether a commercially viable operation results is yet to be seen. Clearly, ship construction and repair can operate successfully in Alaska. The success of Allen Marine in Sitka, building small ferries for its own operations as well as for companies as far away as New York City, demonstrates the fact.

Given the Ketchikan Shipyard's genesis as a government regional development project with no private capital involved, it is not surprising that it has run into trouble. Its main client, AMHS, has been subject to increasing fiscal duress since the project's inception. AMHS' annual deficits have increased at the same time as the State's overall deficits. This has produced pressure both inside and outside the agency for cost savings that, in turn, has limited AMHS' ability to serve as a conduit for subsidizing a non-commercially viable shipyard.

Summary

Alaska's experience with economic development provides some cautionary lessons. Government development efforts are more likely to succeed if:

- ♦ They follow the lead of, or partner with, private investors
- ♦ The private sector is relied upon for financing of commercial infrastructure
- ♦ The projects have adequate capital
- ♦ The projects are based on a sound business plan, vetted by knowledgeable independent parties
- ♦ There are incremental stepping stones to success in terms of scale of production, as opposed to a critical mass required to achieve necessary efficiencies
- ♦ Transportation costs to market are minimized, subsidized, or rendered moot by proximity to regional or intermediary markets.

Seafood Infrastructure Development by Other Governments

Iceland

Icelandic fisheries are private enterprises. The government runs the harbors. Landed fish are subject to a charge of about 1 percent of landed value for use of harbor facilities.

Iceland has an Institute of Regional Development, a non-profit organization funded by the national government. The Institute is under the jurisdiction of the Iceland Ministry of Industry and Commerce. The Institute has branches in each of Iceland's eight political subdivisions, called "constituencies."

The Institute provides credit and other forms of financial support. The aim is to improve economic and living conditions, particularly in those regions threatened by

depopulation. The Institute has two main sources of income: a regular budget allocation and interest on loans.

The Institute is governed by a board of directors whose responsibilities include formulation of policy; plan of annual operations and activities; cooperation with other institutes and funds working to strengthen industry; decisions on total borrowing, share purchases and participation in holding, investment, and development companies; loan and financing terms; and approval of loans and guarantees.

Norway

Norway's Ministry of Fisheries' top priorities are market research, product development and processing technology, and establishing the parameters for an efficient infrastructure.¹³ With regard to infrastructure, public grants for investment are channeled primarily into upgrading production plants to equip them to meet market demands. The Ministry links public-sector funding with an obligation for industry to form cooperative alliances in marketing, distribution networks, and sales.

Norway has an industrial and regional development fund. Criteria for consideration of project funding include a viable business idea, a well prepared project plan that satisfies the demands for commercial and economic profitability, a competent project manager, a capital requirement estimate, a funding break-down and an outline of the anticipated ownership and the conditions of ownership. The project must be based on adequate and long-term capital. Applicants should have the necessary skills and sufficient resources to play an active role in the project.

Chile

Chile's primary method for infrastructure development is through public-private partnerships called "concessions."¹⁴ Private companies develop infrastructure, then charge a fee (such as a toll for a road) that over time will pay the private enterprise for construction of the road. The private investor holds the concession for a period long enough to recover its investment and generate attractive returns. The state is left with the completed infrastructure at the end of the concession period and can put it out to concession again.

The Chilean government makes an analysis of a project's private and public return, incorporating appropriate incentives and distributing the risk between the state and the private investor. The Chilean government develops a plan for private investment, and then invites private investors to participate.

The program offers a state guarantee covering 70 percent of private investment, called the "Guaranteed Minimum Returns" (GMR). The GMR guarantees that if the investor's returns are less than what was agreed to in the contract, the government of Chile makes up the difference. If the investor makes more than the agreed amount, the surplus is returned to the government and dedicated to fund other works.

Projects currently under development under this plan, and indirectly related to fisheries, include construction of roads, bridges, airports, railroads and ports. A runway long enough to handle transpacific planes is currently in the planning stages. When completed, Chile expects increased commerce with Southeast Asia.

It should be noted that Chile's efforts to foster fisheries-related infrastructure builds on a regional/national plan to develop, transport, and market targeted product

¹³ "Perspectives on the development of the Norwegian fisheries industry", Report no. 51 to the Storting (1997-1998), Royal Norwegian Ministry of Fisheries, June 18, 1998, at <http://odin.dep.no/fid/engelsk/p10001872/p10001873/008001-990062/index-dok000-b-n-a.html>.

¹⁴ Government of Chile's website <http://www.cinver.cl/>.

forms. Having a national strategy not only makes it easier for government to evaluate proposed projects, but facilitates private investment by removing a degree of uncertainty.

Chile's approach may constrain the use and benefits of infrastructure that is ostensibly a public good because of the fees or tolls charged.

Summary

These brief overviews suggest several areas worthy of further exploration. The Icelandic approach has evolved in part to address issues also found in Southeast Alaska, including a shift away from reliance on outside capital, concern over the future of rural lifestyles, and a need to address differing regional constituencies. Iceland's response has been to support private enterprise in ways that are rooted in a fundamental understanding of the industry and that make good business sense, such as provision of credit and partnering in industry-led ventures.

Norway's fisheries development is also grounded in a realistic understanding of the industry. It, too, focuses on practical, well thought out business ideas, with an emphasis on finding competitive advantage through innovation.

Finally, Chile is an example of a nationally embraced, market-driven strategy. Beyond the question of whether it is really a good strategy, or whether the imposition of tolls by private companies is fair, there is the issue of whether it would be wise, appropriate, or even possible for a governmental body in the US to foster such a broad-based, unilateral approach. Nevertheless, Chile supports the idea that knowing where you want to go makes it more likely you will get there.

Financing Options

Private sector competition has produced a wealth of types, terms, and sources of financing for commercial infrastructure. It has also created a myriad of public finance structures for governments or public authorities to access capital markets to finance infrastructure that is a public good or mixed public good. Public finance relies on the credit of government entities with tax powers, collateralization with the government's or project's income stream or underlying assets, or third-party guarantees.

Private Lenders

Private lenders should be the first stop for businesses or any commercial infrastructure project. Private lenders commonly offer financing for commercial real estate, machinery and equipment, working capital, inventory, accounts receivable, and import and export purchases and sales. Secured lending is the norm. The bulk of commercial lending is collateralized by real estate, equipment, inventory, or accounts receivable. Established businesses with good credit history may obtain unsecured loans. One Alaska lender requires a minimum of three years of operation to be considered for unsecured loans.

Commercial real estate loans funded from bank capital generally mature in 15 years or less. With SBA guarantees or placement with secondary market lenders such as AIDEA, terms can run to 25 years. Equipment financing maturities depend on the type and life of the equipment, but generally run 7 years or less. Unsecured term loans may have terms of 5 years or so.

Rates depend on the loan amount, loan to value (of collateral) ratio, business and credit history, projected cash flow, strength of management and accounting controls, and presence or absence of third-party guarantees. They can vary from prime for the best customers to prime plus 8 percent or more. One major Alaska bank typically offers various types of business financing including commercial real estate, equipment financing, and secured revolving lines of credit at prime plus 2 percent to eligible borrowers.

Varied forms of lending include lines of credit, revolving lines of credit, term loans, letters of credit, mortgages, second mortgages, equipment leasing, and factoring of accounts receivable.

Alaska Commercial Fishing and Agriculture Bank

The Commercial Fishing and Agriculture Bank is a private cooperative bank that provides loans to Alaska residents. The bank's lending authority has been expanded to include any resource-based industry. This means loans are available to the seafood industry generally, not just commercial fishermen. Eligible borrowers include individuals, partnerships, corporations and other legal entities meeting Alaska residency requirements.

Public Programs

Small Business Administration

The Small Business Administration (SBA) is an agency of the U.S. Department of Commerce that provides many programs to assist small business development. Their financial assistance consists of loan guarantees. They do not have funds for grants or direct lending.

The SBA guarantees loans to small businesses unable to secure financing on reasonable terms through normal lending channels. SBA guarantees the loans made by banks and other lenders. Borrowers must be for-profit small businesses. The SBA has adopted size limits by type of industry to determine if the business meets the criteria of being small.

Guaranteed loans may be used for purchase of real estate to house business operations; construction, renovation or leasehold improvements; acquisition of furniture, fixtures, machinery, and equipment; purchase of inventory; and, working capital. Repayment ability from business cash flow, good character, management capability, collateral, and owner's equity contribution are important considerations in SBA's approval process. All owners of 20 percent or more are required to personally guarantee SBA loans.

The maximum loan amount is \$2 million for SBA's standard program — 7(a) loans. However, the maximum dollar amount the SBA can guarantee is generally \$1 million. Small loans carry a maximum guarantee of 85 percent. Loans are considered small if the gross loan amount is \$150,000 or less. For loans greater than \$150,000, the maximum guarantee is 75 percent.

SBA loan maturities have maximums of 7 years for working capital, 25 years for real estate, and the lesser of 25 years or economic life for plant and equipment financing.

Interest rates are negotiated between the borrower and the lender but are subject to SBA maximums, which are pegged to the prime rate. Interest rates may be fixed or variable.

SBA Interest Rate Maximums for Fixed Rate Loans

<u>Loan Amount</u>	<u>Maturity</u>	
	<u>Less than 7 Years</u>	<u>7 Years or more</u>
\$25,000 or less	prime + 4.25	prime + 4.75
\$25,000 to \$50,000	prime + 3.25	prime + 3.75
\$50,000 or more	prime + 2.25	prime + 2.75

Alaska Industrial Development & Export Authority (AIDEA)

AIDEA assists infrastructure development through four main programs — a loan participation program, a conduit revenue bond program, a business and export loan guarantee program, and its development finance program.

Under AIDEA's loan participation program, AIDEA serves as a secondary market for commercial loans. AIDEA can purchase up to the lesser of 80 percent or \$10,000,000 of a loan originated by a financial institution. Loan to value cannot exceed 75 percent. Terms can be up to 15 years for personal property or 25 years for real property, not to exceed 75 percent of the collateral's remaining economic life. Fixed and variable interest rates are available. Currently, they run about 7 percent for fixed rate loans and 3.7 percent for variable rate loans.

Under its conduit revenue bond program, AIDEA serves as a conduit for businesses to tap both the taxable and tax-exempt bond markets. Neither AIDEA's assets nor credit is at risk with these bond issues.

AIDEA's business and export loan guarantee program guarantees financial institutions up to 80 percent, not to exceed \$1 million, of loans for acquisition of real or personal property, refinancing, working capital, or export transactions. It is targeted to assist businesses located in rural Alaska. The maximum rate a bank may charge on a guaranteed loan is prime plus 2.75 percent.

Under AIDEA's development finance program, AIDEA owns and operates development projects. Many of these have been discussed in the "Alaska Infrastructure Development Projects" section of this report.

Alaska Division of Investments

AIDEA also has two small direct loan programs for economic development — the Rural Development Initiative Fund and the Small Business Economic Development Revolving Loan Program — both administered by the Alaska Department of Community & Economic Development's Division of Investments. The Small Business program is funded by a grant from the U.S. Economic Development Administration (EDA) to provide loans under the EDA's Long-Term Economic Deterioration and Sudden and Severe Economic Dislocation programs.

The Small Business program is limited to specific geographic areas. It has limits of \$300,000 for loan amounts, 90 percent loan to value, a maximum term of 20 years, and interest rates generally below 6 percent.

Rural Development loans are limited to communities of 5,000 or less. Loan amount is limited to \$100,000 per person or \$200,000 for two or more people. Maximum maturity is 25 years and interest is set at the greater of 6 percent or 1 percent below prime.

Export Financing Guarantees

Besides AIDEA, other public and private insurance is available for foreign accounts receivable. Once insured, they can more easily be used as collateral to obtain financing. The Export-Import Bank of the United States offers 90 percent Ex-Im Bank Working Capital Guarantees for large transactions — \$1 million or more — with repayment terms of 12 to 36 months.

Alaska Science and Technology Foundation

Until its endowment was re-appropriated to the General Fund in FY 2004, Alaska Science and Technology Foundation (ASTF) provided grants to promote economic development and technological innovation in Alaska, including fisheries industries. ASTF funded basic and applied research projects for proof of concept (up to \$50,000), prototype development (up to \$200,000), and commercialization (up to \$300,000). Individuals, partnerships, for-profit and non-profit corporations, and government agencies were eligible. A 50 percent cost share is required.

Economic Development Administration

The Economic Development Administration (EDA), an agency of the U.S. Department of Commerce, provides grants for infrastructure projects on a competitive basis. Applicants must be states, municipalities, or non-profit organizations. Grant requests should normally be for \$500,000 or more and create or save at least 500 long-term private sector jobs. A non-federal match of 50 percent or more and a major private sector partner are important criteria.

Fisheries Financing Program (NOAA)

The National Oceanic and Atmospheric Administration, an agency of the U.S. Department of Commerce provides direct loans for up to 80 percent of fisheries or seafood industry project costs. Interest rates are 2 percent over the U.S. Treasury's borrowing cost, with loan maturities up to 25 years. These terms are generally more favorable than private lending.

Southeast Alaska Revolving Loan Fund

The Southeast Alaska Revolving Loan Fund is administered by the Juneau Economic Development Council (JEDC), a non-profit economic development agency serving all Southeast Alaska. JEDC makes direct loans from the fund to new and expanding businesses that cannot qualify for bank financing, but otherwise appear likely to succeed.

Loans range in size from \$5,000 to \$300,000. JEDC will help arrange multi-creditor financing for larger projects and typically attempts to leverage its funding. Maximum loan amounts are based on the number of jobs created or saved. One full-time equivalent position is required for each \$30,000 in loan funds. Preference is given to manufacturing or highly paid jobs. Loans may have maturities up to 5 years.

Loans are available for debt refinancing, purchase of fixed assets, working capital, and construction and leasehold improvements. Extensive business counseling is available through JEDC and its associates.

Loan criteria include dedicated and experienced management, past performance, viability of the business, and clear competitive advantages. A complete and current business plan is required.

Fishery Industrial Technology Center

The University of Alaska School of Fisheries and Ocean Sciences' Fishery Industrial Technology Center (FITC) operates a state-of-the-art seafood research and development facility in Kodiak, Alaska. FITC seeks to discover better methods to harvest, preserve, process, and package Alaska seafood.

Alaska Fisheries Development Foundation

The Alaska Fisheries Development Foundation (AFDF) is a non-profit corporation made up of members of both the fishing and seafood processing industries. AFDF sponsors and conducts research and demonstration projects that are too risky or expensive for a single company to conduct. AFDF focuses on creating opportunities for fishermen, filling the gaps in US seafood processing technology, and exploring new uses for Alaska's seafood products.

Alaska Department of Transportation & Public Facilities

The Alaska Department of Transportation & Public Facilities (DOT&PF) is the State agency responsible for roads, airports, and harbors. All Federal aid to transportation flows through DOT&PF. The Governor's 2004 capital budget for DOT&PF totals almost \$700 million in Federal funds. Almost \$500 million of the total is for surface transportation and \$150 million for aviation facilities. During 1998 through 2002, Federal Highway Trust Fund apportionments and allocations to Alaska have run from \$300 million to \$500 million a year. These amounts could change in the future. The Federal aid programs for surface transportation must be reauthorized by Congressional legislation for Federal fiscal years beginning after 2003.

Projects in Southeast Alaska are determined through the Federally mandated planning process for the Statewide Transportation Improvement Program (STIP) and the State legislative appropriations process. DOT&PF has project evaluation criteria for nine different categories of projects, such as urban roads, remote roads, harbors, airport buildings, airport equipment, etc. Numerical scores are awarded to each criteria and each criteria is weighted to produce overall departmental rankings of projects.

Other Potential Funding Mechanisms

Private foundations have pioneered two funding mechanisms that might be useful to the SSSF. These are Program-Related Investments and Recoverable Grants. As the names imply, these funding mechanisms lie somewhere between traditional investment vehicles and outright grants.

Program-Related Investments

So-called "PRIs" may consist of equity investments or loans, made at favorable rates, that have both financial and program covenants. That is, they require that the entity receiving the investment guarantee that it will achieve a certain level of financial performance and specified social impacts, for example with respect to job creation, serving a disadvantaged community, or whatever program goals the funder and recipient agree on. Both the financial expectations (including payment of principal and interest if the investment is structured as a loan) and the program goals are incorporated into the investment covenants. Failure to meet either set of performance expectations can result in default by the recipient.

Recipients of PRIs are often not-for-profit organizations that have the capacity both to earn income (to repay the investment) and to accomplish a social mission. However, for-profit businesses may qualify for PRIs, as well. For example, a bank in a disadvantaged community might obtain a PRI to increase its ability to provide business and home equity loans to borrowers from the community. The PRI is repaid from loan proceeds and the bank documents the fact that it is making loans to borrowers who otherwise would not have been able to obtain them. Low income housing and small business development organizations are other typical PRI candidates.

Recoverable Grants

Recoverable grants tend to have similar goals to PRIs, but with less complex financial structuring. The grant is made with an expectation that it will help create an income stream in addition to whatever program goals the funder stipulates. If the income materializes, the recipient repays the grant. If income is insufficient to repay the grant, the grant typically is forgiven. As additional incentive for the recipient, future grants may be made contingent upon repayment of the initial one.

CRITERIA FOR EVALUATING SALMON INFRASTRUCTURE

Following a brief review of relevant study findings, this chapter proposes criteria for evaluating salmon infrastructure investments.

Sources of Infrastructure Criteria

Industry Priorities

Speaking broadly, dependable transportation for fresh product, overall product quality, and fish waste processing are major industry themes. Additional freezing and frozen storage capacity is seen as a key issue by some industry interests, but is opposed by others. However, it is difficult to generalize about infrastructure priorities for a multi-faceted industry. Priorities expressed during public involvement activities tended to reflect the needs of individual companies, communities, locations, etc.

Fishermen – and, to some extent, processors – see a danger in relying heavily on traditional markets and distribution channels. Many favor infrastructure that helps provide more options and more local control over when, where and in what form salmon are shipped and marketed. However, there is disagreement over whether the infrastructure should be publicly supplied and available or developed by private firms for their own use.

A clear lesson of fish farming not lost on the Southeast Alaska industry is the benefit of spreading production as evenly as possible throughout the year. Processing capacity, storage capacity, season length/timing, and transportation options are all part of this challenge. For example, cold storage not only allows processors to postpone processing from peak to shoulder- or off-season, it means that the frozen fish may be used for product forms that are impractical during peak season because of time, space and manpower requirements.

Access to capital -- both for operations and new investment -- is another broad issue, but was not often cited as a key concern during the study. Issues more specific to individual locations include power cost, fresh water availability, ice availability, and space to store and repair gear.

Community Priorities

Having seen the dangers of relying on a traditional salmon industry structure, many smaller fishing communities of Southeast have expressed interest in developing local processing, storage and marketing of value-added salmon products. Communities that have depended on logging and fishing are struggling. In general, the smaller and more rural the community, the more acute the situation. Larger “regional hubs” have also been affected by the downturns in these industries. However, they have more options, particularly communities with transportation links.

Market Trends

Of all the salmon-producing regions in Alaska, Southeast is closest to its primary markets. Southeast Alaska also has the longest supply season in the state for high-value salmon and is the only region in the state that can supply fresh salmon during every month of the year. These factors make high-value salmon from Southeast Alaska an excellent candidate for large-scale niche markets, such as frozen-at-sea coho, troll king salmon and bled gillnet sockeye.

Virtually all the growth in U.S. salmon imports is in fillet products. Frozen salmon fillets are a significant segment of the U.S. fillet market, and represent a promising opportunity for Alaska producers.

There is growing interest in manufacturing pink salmon products in pouches. Perhaps the best regional strategy for pink salmon production is to use freezing and pouch lines during the shoulder seasons, when volume is light and throughput limitations would not affect roe recovery. When harvest exceeds throughput of those lines, production would then be shifted to traditional high-capacity can lines to maximize throughput and recovery of roe. Another strategy is to sort the fish for sex upon arrival at the plant, sending females for immediate processing and holding males as necessary. Ultimately, any infrastructure improvement that can divert volume away from the traditional canned salmon form will help reduce the oversupply situation for that product and improve the market.

The combination of high-value species, widespread chilling, and proximity to US markets has led a growing number of Southeast fishermen and small processors to target small grocery chains, upscale markets and restaurants, and other small-volume purchasers in a variety of locations across the country. This is an area where public infrastructure – community-owned equipment, transportation links, generic marketing, regional branding, etc. – can clearly help. It is very difficult to predict how a regional “micro-market” strategy would fare relative to its cost. However, this approach holds promise for at least some smaller rural communities.

Lack of effective fish waste processing is an environmental concern. It also impedes realization of the full value of the salmon resource both by limiting production of high-value roe and because the full value of the carcass is not realized. Potentially broad public benefits could result from encouraging the production of oil, meal, hydrolizate, compost and other saleable fish waste products.

Finally, many in the industry have recognized the potential value in differentiating (branding) Southeast Alaska salmon on the basis of superior quality. Accomplishing this will take a highly coordinated, region-wide and industry-wide effort.

Economic Impact Measures

Direct and indirect resident employment, local spending and local tax revenues are the basic measures of economic impact. These must be evaluated in the context of the likelihood of project success and the project’s economic sustainability and duration. The other important consideration is the number and type of beneficiary groups. That is, do benefits accrue first or mainly to harvesters? Processors? Support industries? How effectively will benefits spread to communities and the region as a

whole? Methods for helping to assess these impacts are described in the chapter on Economic Impacts.

Public Investment Guidelines

Analysis of the role of public investment in industry infrastructure produced the following guidelines:

- ♦ In general, an infrastructure project should demonstrate that private financing is not available in order to be eligible for public funding. However, the public sector should assume the role of providing public goods whenever total benefits (to society) exceed the costs, regardless of the availability of private financing.
- ♦ Public assets that receive broad use are more clearly appropriate for public funding than those that directly benefit a relatively small group of users.
- ♦ If government funds research and development by or through private enterprises, it normally should require that the results remain in the public domain.
- ♦ Public funding of infrastructure projects is most desirable when it can be demonstrated that the value of the funding will be leveraged by specific local resources, knowledge and skills, and by sustained local initiative.
- ♦ Achieving public goals through private entities, regardless of whether they are structured as for-profit or not-for-profit, requires careful financial structuring, contracting, oversight, and evaluation.
- ♦ Public support of infrastructure development is best confined to projects that do not require the financial success of an individual venture in order to realize an acceptable level of public benefits. An exception may be ventures with true market advantages that have substantial management and financial participation by a well established private firm.
- ♦ The greater a project's reliance on public financing or subsidies, the greater is the degree of prudence that must be exercised. Prudence becomes absolutely critical when a project serves one user, typically the case for commercial infrastructure.
- ♦ Unless government is prepared to justify the cost purely in terms of the knowledge gained, funding technology demonstrations should be viewed as something of a last resort, after other means or incentives for encouraging private adoption of best practices have been explored.

Potential Infrastructure Criteria

To develop a list of infrastructure project evaluation criteria, the study team considered all the factors above. The team also reviewed project evaluation criteria used by AIDEA, EDA, the Alaska Sea Grant College Program, the Oregon Sea Grant program, and DOT&PF. Appendix II contains scoring guides for selected DOT&PF project evaluation criteria that might be applicable to salmon infrastructure projects. Many of these are harbor project criteria.

Five main types of criteria were identified:

1. **Relevance to an overall regional market strategy** – does the project help improve the overall market position of Southeast Alaska salmon producers?
2. **Quality of information provided** – is enough known about the project's goals and risks to make a well-informed judgment about its likely impacts?
3. **Appropriateness for public investment** – does the project warrant expenditure of public funds?
4. **Financial/program soundness** – how sound or risky is the business case and how reliable is the entity proposing the project?
5. **Economic impact** – how much economic impact is the project likely to create in the short, medium and long terms?

Relevance to a Regional Strategy

There is not yet a clearly defined regional positioning strategy. This study is intended as a step toward development of that strategy. However, DCED's current funding guidelines identify five goals, two of which involve market positioning:¹⁵

- ♦ Improve seafood/product quality.
- ♦ Increase seafood/product diversity and/or value in the consumer or food service markets.

These goals are consistent with market analysis performed for this study, which indicates that a regional positioning strategy should include:

- ♦ Differentiate Southeast Alaska on the basis of quality through innovative handling, shipping and product forms.
- ♦ Take advantage of growth in domestic demand for fillets.
- ♦ Extend the production season and make best use of economical barge transport with innovative frozen and packaged products.

¹⁵ The others are related to the remaining types of criteria. They are: increase profitability for harvesters and/or processors; lower production costs; and increase economic activity within the community and/or region.

- ♦ Maximize roe value by increasing throughput during busy harvest periods.
- ♦ Encourage productive use of fish waste to 1) improve throughput, 2) maximize economic returns, and 3) project an environmentally responsible image.

Quality of Information Provided

- ♦ The information needed to evaluate the proposal is presented clearly and in enough detail to allow thorough evaluation, preferably as a formal business plan. Factual data is drawn from reliable sources.
- ♦ Peer reviews, independent evaluations, feasibility or benefit/cost studies, and due diligence reports have been conducted that support the viability and potential impacts of the project.
- ♦ The project has specific, preferably quantifiable, goals. There is a reporting and tracking mechanism so that success may be measured.

Appropriateness for Public Investment

- ♦ The project addresses an important functional or economic goal that is consonant with SSSF's overall goals.
- ♦ The project would not be undertaken unless there is some public investment.
- ♦ The infrastructure has community or, preferably, regional support, and (especially) the support of the people who are intended to use it.
- ♦ The project will create tangible or intangible assets that belong to the public (public goods).
- ♦ The project will accomplish a public policy goal, for example, alleviating economic distress or inequity.

Financial/Program Soundness

- ♦ The entity proposing the project has a record of effective development activities that are similar or related to the project.
- ♦ The entity proposing the project has the managerial, technical and other expertise to succeed.
- ♦ The mechanism by which the infrastructure will be maintained and managed throughout its useful life is clear and well conceived.

- ♦ The project has matching funds from private investors/lenders (best) or other public entities.
- ♦ The project will meet clear, documented needs.

Economic Impact

The project will create economic impacts that can be measured by some or all of the following:

Business Income

- ♦ Harvesting: Ex-vessel gross and \$ per pound
- ♦ Processing: First Wholesale value
- ♦ Support: Gross business sales

Personal Income and Employment (direct and induced)

- ♦ Resident wages
- ♦ Resident proprietor income
- ♦ Number of seasonal and year-round jobs

Government Income

- ♦ Property taxes
- ♦ Sales taxes
- ♦ Other income, such as fish taxes and user fees

Business Development Criteria

- ♦ The business case implies a high likelihood of success

Economic Sustainability and Duration

- ♦ Short-run success outlook
- ♦ Long-run success outlook

Secondary Impact Criteria

- ♦ The investment creates positive impacts on other seafood products and other economic sectors
- ♦ Externalities – external costs or benefits to community or region
- ♦ Fairness to competitors – industry-wide benefits

Structure of Funding

Appropriate criteria will depend to some extent on the type of assistance the SSSF provides. Different programmatic and financial criteria would come into play depending on whether the fund provides grants, loans, or equity investments. Each of these mechanisms requires somewhat different structuring and oversight

capabilities on the part of the Fund. For example, if the SSSF funds grants, program managers will focus primarily on programmatic oversight to ensure that grantees accomplish the goals of their grants.

If the Fund makes loans, its small size suggests placing it under an existing lending operation for administration. The Alaska Department of Community & Economic Development's Division of Investments or the Juneau Economic Development Council, which administers the Southeast Alaska Revolving Loan Fund, would be obvious candidates.

AIDEA's statutes (AS 44.88) and regulations (3 AAC 99) could provide useful models for loan funds, both as to lending terms and administrative operations. Two EDA documents — "Revolving Loan Fund Plan Guidelines" and "Revolving Loan Fund Standard Terms and Conditions," Releases 9-30-02 — also could be helpful should the SSSF establish a loan or loan guarantee fund. The documents govern EDA grants for the establishment of revolving loan funds. They include guidelines on establishing an organizational structure for a fund and operational and administrative procedures, including loan processing, approval, and servicing.

Equity investments may require specific industry and business expertise. In some instances, the equity investor may need to be prepared to play a role in company management.

RECOMMENDED PRIORITIES FOR SSSF INFRASTRUCTURE PROJECTS

The SSSF is likely to be most effective if it focuses on infrastructure that both meets the criteria discussed in this report and is practical to fund. In general, quality enhancement is an attractive focus for an ADF&G-managed fund, and may be adopted as an overarching goal. For example, quality is an area where limited funding can have an impact, one that has broad regional benefits, that supports a variety of regional marketing and fisheries development strategies, and that fits well with ADF&G's mission. With respect to specific projects, following are four types that meet study criteria and are reasonably straightforward to implement:

Promising Project Categories

1) Ice machines (and possibly belt/blast freezers) – Ice is needed in many communities and is central to quality. Consistent quality, in turn, is essential for regional branding. If the Fund pursues this type of investment, it should consider requiring a modest community match. For ice machines, the product should be available at a reasonable price up to some threshold poundage per user. Users wanting more may purchase it as available at market prices, if that does not preclude general access.

Belt freezers may also be treated as an investment in quality. Funding belt freezers would be a way to support locally popular cold storage and community processing facilities without getting the SSSF involved in detailed evaluation of those potentially complex and expensive projects (see below). For example, SSSF could simply agree to fund most of the purchase price of a belt freezer for any community able to build or substantially upgrade a public cold storage or custom processing facility using other funds.

2) Technology innovation – This is a way to encourage regional innovation such as new product forms, possibly using recoverable grants. SSSF should require that the technology, if successful, be retained in the region for the general good of the region and that access is not limited to a small group of users. Technology funding might include innovative **transportation projects**, especially those with the potential to be self-supporting and those small enough that SSSF funding is likely to be material to the project's realization or success. A method of regular, rapid, less-than-container-load shipments of fresh and frozen product to regional hubs or direct outside markets might be an example. Another is an information system that consolidates shipping needs region wide on a daily basis thereby making it feasible for one or more air-freight providers to offer additional service when warranted. It is recommended that SSSF funding not be extended to the purchase of standard manufacturing equipment that could be funded through the private sector.

3) Fish waste utilization – Technological advancements in this area have the potential to benefit a wide variety of regional interests, and are therefore a relatively high priority. Fish waste may be used to manufacture a variety of saleable products. In addition, better waste utilization can enhance the quality and value of other

products, notably roe. Finally, waste utilization technology would help processors meet federal waste discharge permit requirements.

4) Small freight consolidation facilities at airports – Temporary cooler storage during flight connections would be relatively inexpensive, and would mitigate much of the risk of sending valuable fresh product from communities near the fishing grounds to regional hubs. Some alteration in freight consignment regulations – allowing small carriers to accept seafood on a consignment basis – may be a complementary strategy. Both have the potential to lower costs and improve both overall product quality and access to niche markets. The feasibility of larger, strategically placed, consolidation facilities is currently under study. These may be candidates for future funding.

Popular, but Problematic, Projects

Dock improvements – Funding of dock improvements and generic equipment that is commonly used by many people, such as hoists or forklifts, is a relatively safe investment from the standpoint of preservation and utilization of the infrastructure asset. However, such projects have limited impact and may most appropriately be funded by local communities. The rationale for this type of investment would be similar to that for ice machines, above, but hoists and forklifts are less obviously linked to higher overall value for the salmon resource than product temperature management. Similar projects, with the same limitations, include drive-down floats, work areas, and upland gear storage. Some communities with substantial fishing activity have no fuel dock – Metlakatla, for example. SSSF might focus on ensuring that fishing communities have off-loading facilities that are equipped at some basic level.

Cold storage facilities – There is a good deal of interest in developing these around the region. However, in the absence of a well-conceived regional plan that indicates where and how they will function, they may be beyond the scope of SSSF investment. They are complex projects that will require substantial due diligence-type analysis to distinguish the most promising from the least promising. Further, it is not clear whether multiple facilities will work well together, or, if the number of facilities is to be limited, on what basis.

While the fund could provide support to any cold storage project that applies, this may not be an effective use of funds and may expose the fund to controversy over particular projects. For example, a network of public cold storage facilities throughout the region would be subject to many of the same challenges as the marine highway system. Facilities will be less likely to be self-supporting in smaller communities and, as a result, will either require ongoing subsidy, or tend to consolidate economic activity in regional hubs, or both. Further, each facility – and possibly the network as a whole -- will require a governing/management body able to balance the various demands of all potential users while at the same time preserving the value of the asset.

Custom/community processing – This is an even more complex extension of the cold storage approach. Potential impacts and pitfalls could only be analyzed on the basis of thorough, documented, business planning. Questions include who will operate and maintain the facility, who will have access and on what basis, how will decisions be made about equipment priorities, what happens if the facility is not self-

supporting? Nevertheless, funding of specific equipment to encourage innovative new products (pinbone removal machines, for example) is warranted under the “technology innovation” category above, provided the benefits are not too narrowly distributed.

APPENDIX 1- FISHERIES ECONOMIC DEVELOPMENT MATCHING GRANT PROGRAM – 2003 PROPOSALS

2003 Fisheries Revitalization Strategy
Fisheries Economic Development Matching Grant Program
Application List

Note: The following list includes all applications received before and after the June 2nd, 2003 deadline.
Inclusion on this list does not indicate eligibility.

Applicant	Project	Amount Requested
Adventure Fare Production, Inc.	Cooking Video and Website	\$ 75,559
Al Cratty Jr.	Boat Repair/Upgrade/RSW	\$ 38,256
Alaska Catch, LLC	Kodiak Fillet Factory	\$ 1,088,000
Alaska Fisheries Development Foundation	Fresh Salmon Transportation	\$ 279,000
Alaska Ocean Products	Freezing and Chilling (Suspension Freeze Process) with Residual Processing	\$ 6,800,000
Alaska Pacific Seafoods	Increasing Production Efficiency and Diversification of Salmon Products	\$ 83,100
Alaska Salmon Purchasers, Inc.	Totes and Ice Machine	\$ 67,277
Alaska Sea Farms	Freezing and Ice Machines	\$ 250,000
Alaska Seafood	Pay Down Debt on Past Renovations and Purchase IFQ	\$ 137,000
Alaska Seafood Connection	Palm Springs Stores	\$ 620,000
Alaska Shellfish Growers Association	Farming Infrastructure	\$ 1,000,000
Aleutians East Borough	Multiple - (harbors, equipment, consolidation facility)	\$ 2,032,474
All In One, Inc.	Quality Improvement Project	\$ 111,000
AQE Fishermen's Market	Freezers, RSW Systems, Ice Machine, Waste Grinder, Other	\$ 358,650

Armstrong Keta, Inc.	Processing Equipment	\$ 485,195
Auction Block Co.	Ice Plant Improvements and Ice Delivery Systems	\$ 45,500
Auction Block Co.	Cold Storage and Display Auction Facilities	\$ 510,000
Bering Sea Fishermen's Association	Operation Costs, Slush Ice Bags, Other	\$ 670,000
Blue Moon Marine	Mariculture Algae Project	\$ 111,000
Bristol Bay Borough	Port of Bristol Bay All Tide Dock	\$ 500,000
Bristol Bay Economic Development Corporation	Quality Projects: Slush Bags, Ice Machines, Etc.	\$ 1,929,160
BuyNPack Seafoods	Ice Machine/ Internet/ New Products/ Refrigeration & Transporation Upgrade	\$ 1,000,000
Byron Skinna Sr.	Vessel Purchase/Upgrade	\$ 183,040
Central Council of Tlingit and Haida Indians of Alaska	Southeast Alaska Intertribal Fish and Wildlife Commission	\$ 1,033,011
Chignik Seafood Producers Alliance	Equipment and Study of Live Capture Processing	\$ 158,445
Chugach Regional Resources Commission	Razor Clam Seed Development	\$ 100,000
City & Borough of Sitka	Fisherman's Support Center	\$ 500,000
City and Borough of Yakutat	Processing Equipment	\$ 275,215
City of Adak	Dock Project	\$ 2,400,000
City of Aleknagik	Aleknagik Boat Storage	\$ 100,000
City of Angoon	Fish Buying Station Upgrades	\$ 1,283,500

City of Chignik	Placement of Berm and Fill	\$ 500,000
City of Coffman Cove	Processing Facility & Marketing	\$ 204,900
City of Craig	Public Ice House	\$ 479,187
City of Dillingham	All-Tide Dock	\$ 2,500,000
City of Hoonah	Boat Haul-Out and Bulkhead	\$ 665,152
City of Hooper Bay	Halibut Hydraulic Gear/Boat Repair Facility	\$ 115,325
City of Hydaburg	Ice Delivery Plant/ Seafood Plant/ City Dock Fishermen Moorage Facility/Cold Storage Facility Plant	\$ 782,200
City of Kaltag	Processing Equipment/Facility	\$ 675,400
City of Ketchikan	Bar Harbor South Drive Down Ramp	\$ 1,200,000
City of Ketchikan	Bar Harbor South Covered Gear Repair Area	\$ 375,000
City of Kodiak	Dock Replacements/Inner Harbor Facilities Design	\$ 2,165,000
City of Nome	Low Level Dock/Small Boat Harbor Dredging	\$ 1,280,606
City of Old Harbor	Chilling Station/Processing Facility	\$ 728,250
City of Old Harbor	Old Harbor Dock Renovation & Expansion Project	\$ 300,000
City of Pelican	Alaska Cuisine Preparation Classes	\$ 105,100
City of Seward	North Harbor Dock & Bulkhead Rehabilitation	\$ 2,623,484
City of Valdez	Fishmeal Plant	\$ 950,000

City of Valdez	Bulkhead Float Extension/ Ice Plant/ Fish Pump/ Crane	\$ 441,225
City of Whittier	Vessel Maintenance Stations, Whittier Small Boat Harbor	\$ 270,916
City of Wrangell	Value-Added Center/Flash Freezer/Cold Storage	\$ 1,755,000
City of Wrangell	Bradfield Iskut Alaska/BC Parallel Cooperative Economic Impact Study	\$ 45,000
Clarence Jackson	Boat Repair/Upgrade/RSW	\$ 132,072
Coastal Villages Region Fund	New Plant, Equipment, RSW on Tenders, Housing, Technology	\$ 4,601,850
Community of Elfin Cove	Community Fish-Buying Station	\$ 375,000
Cook Inlet Aquaculture Association	Small Stream Habitat Improvement Project	\$ 390,000
Cook Inlet Aquaculture Association	Eklutna/Port Graham/Tutka Sockeye Enhancement Project	\$ 2,010,000
Cook Inlet Aquaculture Association	Paint River Lakes Enhancement Project	\$ 900,000
Cook Inlet Salmon Brand Inc.	Value-Added Processing Equipment	\$ 990,000
Copper River Seafoods	Fillet/Smokehouse Improvements and Laboratory	\$ 358,424
Cordova Kitchen Steering Committee	Community Processing Facility	\$ 700,000
Dale Young	Chinook Enhancement and Economic Development Project	\$ 5,000,000
Dave Little	Ice Maching/Totes, etc.	\$ 18,610
Deep Creek Custom Packing	Fillet Line with Pinebone Remover & Grinder	\$ 159,011
Digital Obersserver, Inc.	Smart Tag 2 Project	\$ 80,199

Donald Natkong Sr.	Vessel Upgrades	\$ 21,700
Eric Anderson	Vessel Upgrades	\$ 45,000
Everett Jamestown	Boat Repair/Upgrade	\$ 17,500
F/V Billy & I	Vessel Freezers	\$ 63,535
F/V Donna Jean	Vessel Repairs and Overhaul	\$ 81,150
F/V Lady Michelle	Vessel Repairs and Overhaul	
F/V Mary D	Vessel /Net Upgrades	\$ 79,000
F/V Pretty Penny	Vessel Upgrades	\$ 6,230
F/V Victoria Tracey	Vessel Upgrades	\$ 50,436
Frank Jim	Boat Repair/Upgrade	\$ 10,000
Frank Lane	Vessel Purchase	\$ 25,000
Frank Standifer	Custom Processing/Smoking Facility Construction	\$ 42,900
Fred Parnell	Area J Sea Cucumber/Sea Urchin Test Fishery	\$ 198,899
George Johnson	Boat Repair/Upgrade	\$ 12,690
Half Moon Bay Fisheries	Improving Quality and Ex-Vessel Value of Kodiak Wild Salmon	\$ 26,000
Howard Walcott IV	Vessel/Gear/Permit Purchase	\$ 218,500
Icy Strait Seafoods	Roe Equipment	\$ 38,550

Interior Alaska Fish Processors	Purchase Processing Facility, Land and Repairs	\$ 469,000
James Al Martin	Refrigeration System/Engine Purchase	\$ 46,122
Jimmie Williams	Boat Repair/Upgrade	\$ 5,495
John Carle	Vessel Upgrades	\$ 65,000
Kake Foods, Inc.	Salmon Full Utilizaiton Program (compost)	\$ 198,750
Ketchikan Gateway Borough	Purchase and Retool Ward Cove Plant	\$ 6,300,000
Ketchikan Gateway Borough	Airport Floating Dock Extension	\$ 37,500
Ketchikan Gateway Borough	Cold Storage	\$ 8,272,100
Klawock Cooperative Association	Klawock Cannery Facility	\$ 1,463,011
Kodiak Chamber of Commerce	Determining the Market Potential of a Ready-To-Eat Salmon Product	\$ 58,300
Kodiak Chamber of Commerce	Quality Improvement Project and Feasibility Study	\$ 708,300
Kodiak Kenai Cable Company	Fiber Optic Cable Installation	\$ 2,500,000
Kodiak Public Broadcasting Corporation	Seafood Market Radio Show	\$ 68,114
Kodiak Salmon Packers Inc.	Blast Freezer/Refridgerated Van Storage Area/Processing Equipment	\$ 1,500,000
Kopra Enterprises	Ice Facility	\$ 475,000
Krestof Clam Company	Intertidal Geoduck and Littleneck Clam Mariculture	\$ 125,000
Lisa Frederic	Ice Maching/Totes, etc.	\$ 18,610

Lower Kuskokwim Economic Development Council	Kuskokwim Fisheries Quality Enhancement - Slush bags	\$ 40,800
Matthew Carle	Vessel Upgrades	\$ 53,700
Metlakatla Indian Community	Annette Islands Salmon Waste Compost	\$ 647,824
Native Village of Eyak	Chinook Enhancement/ Processing Facility/ Marketing	\$ 1,774,680
Native Village of Kwinhagak	Runway Extension	\$ 949,588
Native Village of Perryville	Small Boat Harbor Engineering Design	\$ 429,390
Naukati West Inc. Homeowner's Association/Tongass Fishermen and Farmer's Cooperative	Naukati Harbor Wharf/Shellfish Hatchery/Shellfish Nursery	\$ 427,800
Nicholas Daris	Vessel Upgrades	\$ 30,000
NorskStar Seafood	Expansion and Upgrade of Existing Processing Facility	\$ 97,000
Northern Southeast Regional Aquaculture Association	Live Salmon Process and Marketing Project	\$ 88,800
Northern Southeast Regional Aquaculture Association	Hidden Falls Fish Ladder Improvements	\$ 185,000
Ocean Beauty	Processing Equipment	\$ 3,403,660
Old Harbor's Finest	Processing/ Freezing Equipment	\$ 100,000
Pacific Star Seafoods	Freezer Baskets/Pin Bone Machine/Totes	\$ 120,000
Pelican Seafoods	Processing Equipment	\$ 274,550
Peninsula Processing & Smokehouse	Ice Machines, Equipment	\$ 86,100
Peter Demmert	Boat Repair/Upgrade	\$ 12,690

Peter Jack Sr.	Boat Repair/Upgrade	\$ 42,670
Peter Pan Seafoods	Fillet Line/RSW Bin System/Cold Storage	\$ 2,797,000
Petersburg Economic Development Council	Cold Storage and Freight Consolidation Facility	\$ 3,843,350
Petersburg Indian Association	Compostor Purchase	\$ 30,000
Port Bailey Wild Enterprises	Port Bailey Cannery Improvement	\$ 1,134,084
Port Graham Corporation	Fish Processing Facility	
Port Graham Village Council	Hatchery Upgrades	\$ 624,919
Portage Distributing	Cooling Package Manufacturing Equipment	\$ 99,150
Prime Select Seafoods	Equipment and Facility Improvements	\$ 87,650
Prince of Wales Seafood Marketing, LLC	Creation of Prince of Wales Seafood Marketing LLC	\$ 2,064,235
Prince William Sound Aquaculture Corporation	Chum Salmon Enhancement	\$ 230,400
Pristine Products Oyster Farms	Floating Smoke House	\$ 26,575
R & J Seafoods	Roe Operation and Facility Expansion	\$ 245,200
Ravens Table, LLC	Promoting Yakutat Wild Salmon Fisheries through Value-Added Processing (smoke oven and ice machine)	\$ 25,975
Raymond Willis Sr.	Boat Repair/Upgrade	\$ 2,950
Richard King	Flake Ice Machine	\$ 7,950
Robert Demmert	Boat Repair/Upgrade	\$ 12,690

Salamatof Seafood	Value-Added Processing Equipment	\$ 97,400
Salmon Falls, Inc.	Purchase/Upgrade Ketchikan Wards Cove Facility	\$ 1,900,000
Scotch Cap Fisheries	Brine Freezer/Sanitation System Upgrade	\$ 56,100
Scotch Cap Fisheries	Floating Processor Upgrades	\$ 13,850
Sea Products, LLC	Salmon Sausage Marketing/Equipment	\$ 333,145
Seafood Producers Cooperative	Fillet Equipment	\$ 240,364
Skagway Development Corporation	Enhancement Projects	\$ 984,828
Sockeye Alaska	Processing Equipment	\$ 98,950
Southern Southeast Regional Aquaculture Association	Increased Chum Salmon Production at Anita Bay and Neets Bay	\$ 970,000
Southern Southeast Regional Aquaculture Association	Producing Additional Sockeye Smolt at Whale Pass and Burnett Inlet Hatchery	\$ 730,000
Suzanne Abraham	Ice Maching/Totes, etc.	\$ 18,610
Tammy Lin Fisheries	Vacuum Packer/Bags/ Compressor	\$ 5,625
Toby Sullivan	Ice Maching/Totes, etc.	\$ 23,970
Togiak Traditional Council	Boat and Dock Design Work	\$ 668,000
Tonka Seafoods	Processing Equipment Upgrade	\$ 51,640
Trident Seafoods	Fillet Operation	\$ 1,416,000
Unga Tribal Council	Chilling Station/Processing Facility	\$ 502,850

United Salmon Association - Kodiak Chapter	Pin-Bone/Fillet Machines	\$ 90,200
Valdez Fisheries Development Association	Fisheries Business Incubator Investment Phase II (processing equipment/cold storage design)	\$ 311,138
Walter Suomela	Vessel Upgrades/Ice Barge Purchase/Tendering Vessel/Cargo Vessel	\$ 212,500
Whiting Harbor Oyster Farm	Whiting Harbor AquaFarm Improvements	\$ 41,299
Wild Alaska Seafood Products	Colorado Distribution Facility	\$ 60,000
Wildcatch Inc.	Wildcatch Sliced Salmon-Value Added Project	\$ 383,350
Wind and Tide, Inc.	Processing Equipment	\$ 89,800
World Trade Center/ Phoenix Food Consulting	Export Market Research	\$ 767,100
Yardarm Knot Fisheries, LLC	Upgrade Plant and Tender Storage	\$ 1,209,801
YKI Fisheries, Inc.	Forklift/Flatbed/Boom Truck	\$ 139,127
Yukon Delta Fisheries Development Association	Increasing Quality of Processing & Value-Added of Lower Yukon Chinook Salmon and Chum Salmon	\$ 1,425,000
Total		\$ 114,185,711

APPENDIX 2 – ADOT&PF PROJECT CRITERIA

Selected Alaska Department of Transportation & Public Facilities Project Evaluation Criteria

Remote Roads and Trails Project Evaluation Criteria

Standards	Scoring Criteria				
	(5)	(3)	(0)	(-3)	(-5)
4. Improves intermodal transportation or lessens redundant facilities.	Greatly improves the connectivity between modes and coordination and integration of passenger and freight systems and services and/or would clearly reduce the need for significant capital investment in another mode.	Moderately improves the connectivity between modes and enhances coordination and integration of passenger and freight systems and/or would clearly reduce the need for moderate capital investment in another mode.	Minimal or no affect on transportation system connectivity, or coordination and integration of passenger and freight systems and services and does not change the requirement for investment in other modes.	Moderately decreases the connectivity between modes or decreases coordination and integration of passenger and freight systems and/or would clearly require the need for moderate capital investment in another mode.	Greatly decreases the connectivity between modes or decreases coordination and integration of passenger and freight systems and/or would clearly require the need for significant capital investment in another mode.
5. Local, other agency or user contribution to fund capital costs .	Contribution of state match, design, right-of-way, and/or materials totals 25% or more of project cost.	Contribution of state match, design, right-of-way, and/or materials: 1 point per each 5% of project cost.	Contribution covers no capital costs; contributes nothing.	N/A	N/A

Remote Roads and Trails Project Evaluation Criteria (cont'd)

10. Will project provide new and/or improved access to the noted uses: water sources, landfills, sewage lagoons/honey bucket sites, health care, airports, subsistence sites, or river/ocean access?	New access to two or more uses = 5.	New access to one = 3; Improved access to two or more = 2; Improved access to one of listed uses = 1.	None of uses listed.	N/A	N/A
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Aviation General Project Evaluation Criteria

			Scoring Criteria		
Standards	(5)	(3)	(0)	(-3)	(-5)
9. Aviation Alternatives	N/A	N/A	No access to other public aviation	Moderate facility redundancy with access to another public airport.	Substantial facility redundancy with access to another public airport.
10. Community Transportation Alternatives	No other transportation Alternatives available	Transportation Alternatives available	Transportation Alternative available	Other alternatives may provide comparable transportation benefits	Other alternatives will provide superior transportation benefits

Note #1: Under Aviation General Project Evaluation Criteria 10, all season road access available to the contiguous highway system or to an alternative airport = 0. Seasonal road access available to the contiguous highway system or to an alternative airport = 2. All season ferry/barge service available = 1. Seasonal ferry/barge service frequency: Weekly or more frequent service = 2; Less frequent than weekly but more frequently than monthly service = 3; Less frequently than monthly service = 4.

Harbors Project Evaluation Criteria

Standards	Scoring Criteria				
	(5)	(3)	(0)	(-3)	(-5)
2. Maintenance Cost Impact	Deferred maintenance projects that substantially reduce maintenance cost to the State, or local government. New projects that provide substantial protection to existing facilities in exposed locations having a history of high damage and maintenance cost.	Deferred maintenance project that moderately reduces maintenance costs to State or local government. New projects that provide moderate breakwater protection to existing facilities in exposed locations.	Project will increase net maintenance cost to State and/or local government.	N/A	N/A
3. Operational Importance of harbor component to be repaired, rehabilitated, constructed. (No score for new projects in this category.)	Component critical to operation of facility such as approach, gangway and floats.	Important, but not critical, components such as grids, water, electrical system, capacity improvements. Improvements that change function and provide more capacity.	Upland facilities (work floats, restrooms, harbor master offices, parking lots.) Improvements that change function but do not add moorage capacity.	N/A	N/A
4. Effective service life of repaired, rehabilitated, or constructed component.	Greater than 15 years	between 15 and 10	between 5 and 10	less than 5 years	N/A

6. New Harbor Capacity	Project will increase capacity to meet waiting list demand (over 30% of existing community capacity). No existing facility in community.	Project will increase capacity to meet waiting list demand (over 15% of existing community harbor capacity.)	Project will not increase harbor capacity	N/A	Project will reduce harbor capacity.
7. Economic impacts of project.	Supports significant new, identifiable, permanent economic opportunities or benefits statewide. Predominantly a commercial harbor. Improvement projects that preserve significant economic benefits. COE calculated B/C ratio of 1.5 or greater.	Supports moderate new, identifiable, permanent economic opportunities or benefits regionally or locally. More than 30% commercial. Preserves economic benefits. COE calculated B/C ratio of 1.0 or greater.	Supports minimal, speculative or temporary economic opportunities or benefits. Provides or preserves nominal benefits.	N/A	N/A
8. Local interest in project.	Resolution of support from local government, project and in official state/local plans. Desire for local ownership and operation included in resolution if a state owned facility. Commitment of substantial financial participation in project.	Letter(s) from local or borough government in support of project; may be in state/local plans and includes a commitment for local management and operation.	Projects with no indication of support.	N/A	N/A
10. General fund contribution.	Project supports and activity that makes a significant contribution to general fund (Greater than \$0.5 million per year average.	Project supports and activity that makes a normal contribution to general fund (<\$499,00) or will likely support a nominal increase in general fund revenues once constructed.	Project supports and activity that makes a nominal contribution to the general fund. (Less than \$99,000.	Project supports and activity that makes a moderate contribution to general fund.	Project supports and activity that makes a nominal/no contribution to general fund.

APPENDIX 3 – COMMUNITY INFRASTRUCTURE INVENTORY

Angoon, Yakutat

Craig

Hoonah, Elfin Cove

Hydaburg, Pelican, Gustavus

Juneau

Kake, Metlakatla

Petersburg

Sitka

Skagway, Haines

Wrangell

Ketchikan and Others

Freight Service

Ferry Service

	Angoon	Angoon	Angoon	Yakutat	Yakutat
Dock name	Angoon Dock	Angoon Harbor	Killisnoo Dock	Ocean Cape dock	Small dock
Dock Buildings and Support Structures	City of Angoon Operated	City of Angoon Operated	Cement dock on cement pilings, some creosote pilings	Seafood plant maintenance workshop, storage, garage	Dockmaster shed, fish processing shed
Dock Construction	Wood pile and wood deck dock, some creosote pilings	unknown		Heavy concrete deck on steel pile	Wood deck on wood pile
Dock Length (feet)	48				100
Dock Width (feet)	28				25
Dock Square footage	1,300	7,600		26,000	
Dock Vehicle Capacity	Vehicles			Multiple freezer vans, heavy forks, trucks	Light pickups, light forks
Dock Use Status	Functional, needs repair		Functional, needs resurfacing	Fully functional	Closed
Dock Cranes or Hoists	0		1	4	2
Dock Crane/Hoist Capacity	N.A.		unknown	(2) 1,500 lb, (2) 10,000 lb,	(1) 1,500 lb, (1) 10,000
Dock Crane /Hoist Use Status	N.A.		Functional, needs repair to hydraulic motor	Fully functional	Closed
Dock and Crane /Hoist Fees and Use Restrictions	N.A.		No fees, no restrictions	No current dockage or hoist fees	No current dockage or hoist fees
Ice Machine Location	N.A.		Whaler's Island	On dock	On dock
Ice Generation Capacity	N.A.		5-ton	1000 lbs per hour	Off line
Ice Storage Capacity	N.A.		unknown	10000 lbs	Off line
Ice Fees and Use Restrictions	N.A.		None	\$100 per ton for anyone who wishes to buy ice	Facility is closed, no access permitted
Dock Comments	Needs resurfacing, ramps replaced Some storage in IRA warehouse and outside building		Needs resurfacing		
Public Upland Gear Storage			Some storage in old cold storage building	Open storage	
Upland Gear Storage Acreage or Floor Space			70' x 70' Storage building - 1 bay for storage	7 acres	
Upland Gear Storage Fees	None		None	none	
Upland Gear Storage Space Availability				none	
Upland Gear Storage Expansion Constraints				Lack of fish buyer	
Needed Facilities			Buying station		
Needed Services				Fish buyers	
Community Notes				Sitka Sound Seafoods, only processor in community, closed in 2002. Situation is critical. Plant closure affects all setnet operations in area, local troll fleet	
Future Project Type				Vessel haulout	
Future Project Location			Killisnoo Dock	Sawmill Cove	
Future Project Status			Planning	Planning	
Future Project Intended Use			Buying station		

	Craig	Craig	Craig	Craig	Craig
Dock name	City Dock	False Island Dock	North Cove Harbor	South Cove Harbor	Ward Cove Packing Dock
Dock Buildings and Support Structures	Open dock with 20'x70' freight and fishery products staging building, attached 10' x 250' float	Open dock with icehouse	Work and storage float	Load and unload, ramped foot access to floats	Leased dock and building
Dock Construction	Wood deck on wood pile	Concrete and steel pile	Concrete float	Ramp, float	
Dock Length (feet)	74	140	350	520	80
Dock Width (feet)	72	80	60	8	
Dock Square footage					
Dock Vehicle Capacity	Freezer vans, forklifts	Freezer vans, forklifts up to 50 ton axle load rating	No vehicular access, but vans used for storage on float	Foot only	
Dock Use Status	Fully functional	Fully functional	Fully functional	Fully functional	
Dock Cranes or Hoists	1	1	0	0	0
Dock Crane/Hoist Capacity	(1) 9,000 lb	(1) 20,000 lb			
Dock Crane /Hoist Use Status	Fully functional	Fully functional			
Dock and Crane /Hoist Fees and Use Restrictions	Fee charged	Fee charged			
Ice Machine Location	None	On dock			On site
Ice Generation Capacity		20 tons per day			
Ice Storage Capacity		35 tons			
Ice Fees and Use Restrictions		Brand new facility			Supply vessels fishing for company
Dock Comments		Full service fuel dock			Some operations will be run by E.C. Phillips and Sons Cold Storage since Ward Cove is closing
Public Upland Gear Storage	Building on main city dock	Building on Ward Cove Dock		False Island upland storage	
Upland Gear Storage Acreage or Floor Space	1400 sq ft		North Cove floating breakwater used for outdoor and also for covered storage in 27 tractor vans each 8' x 20'. 21,000 sq ft \$600 per year for a van, \$12 per month for 256 sq ft of outside storage space	2 acres	
Upland Gear StorageFees					
Upland Gear Storage Space Availability			limited	good	
Upland Gear Storage Expansion Constraints			Available space on float fully utilized for either work space or for storage	Surplus space, private upland storage options not fully utilized	
Needed Facilities	Vessel haulouts for vessels larger than 32'				
Needed Services					
Community Notes	City operates a wide range of facilities and services				
Future Project Type	Vessel haulout and repair yard	Public processing and cold storage	Acquisition of tidelands and uplands		
Future Project Location	False Island Dock	Craig area	Craig area		
Future Project Status	Planning	Planning and grants applications	Planning		
Future Project Intended Use	Provide opportunity for working on larger vessels	Custom processing or self-processing fish to target specialty markets	Harbor expansion and development of marine associated enterprises on uplands		

	Hoonah	Hoonah	Hoonah	Elfin Cove	Elfin Cove
Dock name	City Dock	Pot Dock	New Harbor	Elfin Cove Inner Harbor	Elfin Cove Outer Harbor
Dock Buildings and Support Structures	Load and unload, ramped foot access to floats	Dock with 75' x 40' warehouse	Load and unload, ramped foot access to floats	Community of Elfin Cove Operated	Community of Elfin Cove Operated
Dock Construction	Wood pile and wood floats	Concrete and steel pile	Concrete and steel pile	Wood pile and wood deck dock	Wood pile and wood deck dock
Dock Length (feet)	300		95		
Dock Width (feet)	8		40		
Dock Square footage				7,500	2,125
Dock Vehicle Capacity	Foot only	Freezer vans	Freezer vans	No vehicles	No vehicles
Dock Use Status	Functional but in marginal condition	Fully functional	Fully functional	Fully functional	Fully functional
Dock Cranes or Hoists	0	1	1	0	0
Dock Crane/Hoist Capacity		(1) 1,500 lb	(1) 10,000 lb	N.A.	N.A.
Dock Crane /Hoist Use Status		Fully functional	Fully functional	N.A.	N.A.
Dock and Crane /Hoist Fees and Use Restrictions		\$10.50 per lift or \$31.50 per hour, only harbormaster operates crane	\$10.50 per lift or \$31.50 per hour, only harbormaster operates crane	No dockage fees, no restrictions	No dockage fees, no restrictions
Ice Machine Location		None	None	None	None
Ice Generation Capacity				N.A.	N.A.
Ice Storage Capacity				N.A.	N.A.
Ice Fees and Use Restrictions				N.A.	N.A.
Dock Comments			City has a large boat trailer leased to private operators for moving boats up to gillnet size, but no provisions for boat yard		Needs some replacement flotation, some lumber to replace
Public Upland Gear Storage	Pot dock has open storage and enclosed storage in metal building			No public upland storage	No public upland storage
Upland Gear Storage Acreage or Floor Space					
Upland Gear StorageFees	\$576 per year for outside storage, \$378 per year for inside storage				
Upland Gear Storage Space Availability	limited storage by private company on leased city land, includes building and enclosed yard, zoning restrictions on boat storage				
Upland Gear Storage Expansion Constraints	replacement storage space for gear storage lost when Ward Cove closed their Point Sophia and Excursion Inlet facilities	Work float for gear and vessel maintenance	Floating dock with vehicular access for loading and unloading vessels		
Needed Facilities					
Needed Services					
Community Notes	Community in transition, possibly from fishing focus to tourism support, closure of Ward Cove facilities will affect seiners primarily, but will also affect trollers to some extent				
Future Project Type	Dock and warehouse or upland lot and warehouse	Work float for gear and vessel maintenance	Floating dock with vehicular access for loading and unloading vessels	None	None
Future Project Location	Downtown Hoonah	Point Sophia	New Harbor		
Future Project Status	Planning replacement storage space for gear storage lost when Ward Cove closed their Point Sophia and Excursion Inlet facilities	Planning	Planning		
Future Project Intended Use		Seine and troll vessel gear work and maintenance	Serve needs of fishermen doing direct sales and loading and unloading their boats		

Dock name	Hydaburg	Hydaburg	Pelican	Pelican	Gustavus	Gustavus
Dock Buildings and Support Structures	Hydaburg Harbor City of Hydaburg Operated wood and creosote pilings with wood deck dock	Downtown Dock Metal and wood pilings with metal ramps	Pelican Harbor City of Pelican Operated Wood pilings and wood deck dock	Ferry Dock State Operated Concrete dock with creosote and concrete pilings	State Dock wood pile and wood deck dock, with floats for moorage	Bartlett Cove Dock National Park Service Operated Wood dock with foam flotation
Dock Construction						
Dock Length (feet)					58	
Dock Width (feet)					48	
Dock Square footage	15,800		13,200		2,800	19,000
Dock Vehicle Capacity	No vehicles	No vehicles	No vehicles	1-ton truck on ramps	Vehicles	30,000 lbs.
Dock Use Status	Functional, needs repair to pilings	Functional	Functional but in marginal condition	Functional, needs repair	Functional but in marginal condition	Fully functional
Dock Cranes or Hoists	0	0	0	0	0	0
Dock Crane/Hoist Capacity	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Dock Crane /Hoist Use Status	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Dock and Crane /Hoist Fees and Use Restrictions	No dock use restrictions	No dock use restrictions	No dockage fees, no restrictions	No dockage fees, no restrictions	No dockage fees, no restrictions	No dockage fees, some restrictions
Ice Machine Location	None	None	Cold Storage Facility	None	None	None
Ice Generation Capacity	N.A.	N.A.	unknown	N.A.	N.A.	N.A.
Ice Storage Capacity	N.A.	N.A.	unknown	N.A.	N.A.	N.A.
Ice Fees and Use Restrictions	N.A.	N.A.	Fees for commercial vessels	N.A.	None	None
Dock Comments	Ramp not lined up with floats			Needs repair to dock surface, dolphins	In poor condition, unprotected from weather	National Park Service limits use to vessels that can legally enter Glacier Bay National Park
Public Upland Gear Storage	Hydaburg	Hydaburg	Pelican	Pelican	No public upland storage	No public upland storage
Upland Gear Storage Acreage or Floor Space	No public upland gear storage	Public storage in old net house	Outside storage space	No public upland storage		
Upland Gear StorageFees		50' x 200'	80' x 200'			
Upland Gear Storage Space Availability		None	None			
Upland Gear Storage Expansion Constraints		good	fair			
Needed Facilities	Hydaburg need boat ramp, ice, storage and gear repair area	Hydaburg	Pelican	Pelican	Replace existing dock, ice machine	None
Needed Services		Need boat ramp	Repair existing dock	Need a breakwater	Cheaper electricity or diesel generator	None Only vessels legally permitted to enter Glacier Bay have access to this dock
Community Notes	Hydaburg	Hydaburg	Pelican			
Future Project Type	Hydaburg	Hydaburg	Pelican upgrade harbor and electrical, replace finger floats		None	None
Future Project Location	None	None				
Future Project Status			Pelican Harbor			
Future Project Intended Use			In Permitting Process Need airplane float, need dredging			

	Juneau	Juneau	Juneau	Juneau	Juneau	Juneau
Dock name	Douglas dock	Aurora harbor	Fishermen's Terminal temporarily leased space for private ice machine, private crab tanks	Auke Bay Harbor	Harris Harbor	Harris Harbor
Dock Buildings and Support Structures	Open dock Wood deck on wood pile	Open dock approachway to floats Wood deck on wood pile	Solid fill behind sheet pile	Harbormaster's office	Shed Wood deck on wood pile	"Jet" float
Dock Construction				Floating docks		Plastic modular
Dock Length (feet)			150		75	150
Dock Width (feet)			50		25	10
Dock Square footage	8,750	3,760		2,500		
Dock Vehicle Capacity	Flatbed truck with crane	Pickup trucks	Multiple freezer vans, heavy forks, trucks	Not accessible	Flatbed truck with crane	None
Dock Use Status			Fully functional	Fully functional	Fully functional	Fully functional during summer
Dock Cranes or Hoists	0	0	3 (2) 3,000 lb, (1) 2,000 lb	0	1	0
Dock Crane/Hoist Capacity					(1) 2,000 lb	
Dock Crane /Hoist Use Status	N.A.	N.A.	Fully functional \$10 for first 30 minutes, \$15 per hour thereafter, or \$200 per year	N.A.	Fully functional \$10 for first 30 minutes, \$15 per hour thereafter, or \$200 per year	N.A.
Dock and Crane /Hoist Fees and Use Restrictions	No current dockage or hoist fees			N.A.		n
Ice Machine Location	None		On dock	None	None	None
Ice Generation Capacity	N.A.		unknown	N.A.	N.A.	N.A.
Ice Storage Capacity	N.A.		unknown	N.A.	N.A.	N.A.
Ice Fees and Use Restrictions	N.A.		unknown	N.A.	N.A.	N.A.
Dock Comments			Private 30 ton capacity vessel traveling lift			gillnet work float only
Public Upland Gear Storage	Douglas Dock					
Upland Gear Storage Acreage or Floor Space	.25 acres					
Upland Gear Storage Fees						
Upland Gear Storage Space Availability	limited not priority need, needs met by private storage yards/buildings					
Upland Gear Storage Expansion Constraints						
Needed Facilities	Float for trollers to work on poles, drive down for vessel loading, work floats for gillnets and other gear, ice plant in Auke Bay					
Needed Services						
Community Notes	Juneau facilities and operations scaled to gillnetters, some trollers, not to seiners although all gear groups present seasonally and all year					
Future Project Type	Commercial boarding float system					
Future Project Location	Auke Bay					
Future Project Status	Site selection					
Future Project Intended Use	Loading and unloading of commercial fishing and tourism vessels					

Dock name	Kake Portage Cove	Kake Downtown Dock	Kake Cold Storage Dock	Kake Public Cargo Dock	Metlakatla State Dock	Metlakatla Cannery Dock
Dock Buildings and Support Structures	20 x 40 work float, barge used for storage of fishing gear, breakwater used for working on gear, storage	Dock on piles, rubble mound approachway	Kake Tribal Corp dock	Barge transfer facility, city shops, propane and fuel oil Concrete pile retention curtains with rubble backfill	Primarily a floatplane dock	Annette Island Packing Company dock
Dock Construction	Floating breakwater	Woodpile and deck?			Wood deck float	Wood pile and deck
Dock Length (feet)	506	67		300		
Dock Width (feet)	12	32		200		
Dock Square footage						
Dock Vehicle Capacity	No vehicle access to breakwater	Pickup access to dock	Pickup access to dock	Vans, forklifts, heavy trucks	No vehicle access to plane float	Pickup access to dock
Dock Use Status	Fully functional	Fully functional	Fully functional	Fully functional	Fully functional	Fully functional
Dock Cranes or Hoists		0	3	0	0	2
Dock Crane/Hoist Capacity			(3) 1,200 lb			(1) 1,000 lb (1) 1,500 lb
Dock Crane /Hoist Use Status			Fully functional			Fully functional
Dock and Crane /Hoist Fees and Use Restrictions			fee			
Ice Machine Location			Cold Storage Dock			Annette Island Packing Company dock
Ice Generation Capacity						100 ton per day
Ice Storage Capacity						1,000 ton
Ice Fees and Use Restrictions			Fee		Float used for working on seine and gillnets, no berthing or storage	Harbors lack facilities like docks and work floats, used mostly for mooring vessels
Dock Comments						
Public Upland Gear Storage	Public storage limited to small area around barge dock				Public storage yard around New Breakwater harbor	
Upland Gear Storage Acreage or Floor Space					600' x 30'	
Upland Gear StorageFees	Fee charged by AML for use of upland storage				none	
Upland Gear Storage Space Availability	limited seasonally				good	
Upland Gear Storage Expansion Constraints					Storage space not considered a problem, and many vessels and most gear stored around homes of salmon fishermen. Cannery provides some lockers and covered storage for vessels fishing for the company	
Needed Facilities	Bigger work float at Portage Bay				Fuel dock, larger net mending repair float, seine loft, ice machine	
Needed Services					Fueling facilities for major petroleum products, dry storage for fishing gear	
Community Notes					Native American Indian Reservation status precludes inclusion of facilities and services in state budgeting process	
Future Project Type	none				none	
Future Project Location						
Future Project Status						
Future Project Intended Use						

	Petersburg	Petersburg	Petersburg
Dock name	Petersburg South Harbor	Petersburg Middle Harbor	Petersburg North Harbor
Dock Buildings and Support Structures	Open dock with cranes	Floats and fingers for moorage, gear float anchored offshore	Floats and fingers for moorage
Dock Construction	Concrete and steel pile	Wood deck on floats	Floating docks
Dock Length (feet)	120	200	
Dock Width (feet)	36	12	
Dock Square footage			
Dock Vehicle Capacity	Freezer vans, heavy forks, trucks	Foot only on gear float	Foot only
Dock Use Status	Fully functional	Fully functional	Fully functional
Dock Cranes or Hoists	2	0	0
Dock Crane/Hoist Capacity	(1) 5,000 lb, (1) 10,000 lb		
Dock Crane /Hoist Use Status	Fully functional		
Dock and Crane /Hoist Fees and Use Restrictions	\$15 per hour, keyed by radio from harbormaster's office		
Ice Machine Location	None		
Ice Generation Capacity			
Ice Storage Capacity			
Ice Fees and Use Restrictions			
Dock Comments			Three private ice machines for supplying processors' fishing boats
Public Upland Gear Storage	Scow Bay, other areas in town		
Upland Gear Storage Acreage or Floor Space	12.5 acres total		
Upland Gear Storage Fees	\$18 per square foot per month		
Upland Gear Storage Space Availability	good		
Upland Gear Storage Expansion Constraints	Many fishermen build and maintain their own storage and work sheds		
Needed Facilities	More docks and cranes		
Needed Services	Need to move gear and products more efficiently and quickly		
Community Notes			
Future Project Type	Floating dock with full vehicle access	Sheetpile seawall with cranes	
Future Project Location	Downtown Petersburg	Downtown Petersburg	
Future Project Status	Planning	Planning and site selection	
Future Project Intended Use	Better serve smaller commercial vessels	Easier loading and unloading vessels, serving larger tour vessels, larger commercial vessels	

Dock name	Sitka Old Thompson Harbor	Sitka New Thompson Harbor	Sitka Crescent Harbor	Sitka Workfloat	Sitka Seawall Large vehicle access for moving fishing gear or product from freezer vessels
Dock Buildings and Support Structures		Float with vehicular access, drive on, drive off	Pier with 50' x 100' shelter for working on nets	50' x 100' offshore float for fishing gear work only	Sheetpile and fill
Dock Construction					
Dock Length (feet)		80	160		350
Dock Width (feet)		50	30		
Dock Square footage					
Dock Vehicle Capacity		10,000 lb GVW	Freezer vans		Freezer vans
Dock Use Status		Fully functional	Fully functional		Fully functional
Dock Cranes or Hoists		0	0		1
Dock Crane/Hoist Capacity					(1) 1,500 lb
Dock Crane /Hoist Use Status					Fully functional
Dock and Crane /Hoist Fees and Use Restrictions					
Ice Machine Location					
Ice Generation Capacity					
Ice Storage Capacity					
Ice Fees and Use Restrictions					
Dock Comments					
Public Upland Gear Storage	No public upland storage				
Upland Gear Storage Acreage or Floor Space					
Upland Gear Storage Fees					
Upland Gear Storage Space Availability					
Upland Gear Storage Expansion Constraints	Public facilities would compete with private sector				
Needed Facilities	No critical needs				
Needed Services	Balances wide range of public services with private sector				
Community Notes					
Future Project Type	Upland boat storage				
Future Project Location	Old pulpmill site				
Future Project Status	Planning				
	Provide for covered and dry storage of boats and gear				
Future Project Intended Use					

Dock name	Skagway Skagway Harbor	Skagway Marine Highways float open dock with vehicular approachway to floats, ramped vehicular access to ferry float, use of half of float for transfer of product and gear and supplies	Haines Letnikof	Haines Portage Cove Harbor	Haines Lutak Launch and Barge Dock	Haines Haines Fisheries Dock
Dock Buildings and Support Structures	Open dock with vehicular approachway to floats, ramped foot access to floats		Ramped foot access to floats	Ramped foot access to floats	Barge transfer facility	Open dock run by city at old Haines Fisheries Plant
Dock Construction	Wood deck on wood pile	Steel ramp, concrete float	Steel ramp, concrete float	Ramp, float	Steel ramp, float	Wood deck on wood pile
Dock Length (feet)		165	30		175	60
Dock Width (feet)		80	12		15	40
Dock Square footage	1,700					
Dock Vehicle Capacity	Pickup trucks	Multiple freezer vans, heavy forks, trucks	Foot only	Pickup trucks	Multiple freezer vans, heavy forks, trucks	Pickup trucks
Dock Use Status	Fully functional	Fully functional	Fully functional	Fully functional	Fully functional	Prior arrangement only, marginal condition
Dock Cranes or Hoists	0	1	0	0	0	1
Dock Crane/Hoist Capacity		(1) 4,000 lb				(1) 3,400 lb
Dock Crane /Hoist Use Status	N.A.	Fully functional				Fully functional
Dock and Crane /Hoist Fees and Use Restrictions	n	\$20 per hour, harbormaster operates crane, keyed access				\$10 per day or \$50 per year, keyed access
Ice Machine Location	None	None	None	None	None	None
Ice Generation Capacity	N.A.					
Ice Storage Capacity	N.A.					
Ice Fees and Use Restrictions	N.A.					
Dock Comments		no gear storage or work area because use is limited by agreement with ferry system			Lutak use by prior arrangement only	
Public Upland Gear Storage	Open, with a few shipping containers for covered storage		Restricted storage of containerized or boxed gear only at old Haines Fisheries Dock			
Upland Gear Storage Acreage or Floor Space	3 acres		2400 sq ft			
Upland Gear StorageFees	\$0.15 per foot per month, and \$5.00 per day for electricity					
Upland Gear Storage Space Availability	good		poor			
Upland Gear Storage Expansion Constraints	No clear need Processing plant, offloading dock, product consolidation and shipping facility, ice plant in town		Not priority need, most needs met by private storage yards/buildings			
Needed Facilities			Ice plant			
Needed Services			Vessel and gear storage			
Community Notes	Salmon fisheries limited to gillnet, a few trollers. Skagway has edge in upland dry storage of vessels because of dry climate, low rates		Salmon fisheries limited to gillnet, a few trollers.			
Future Project Type	Expand harbor		Rental space, ice machine			
Future Project Location	Skagway Harbor		Portage Harbor			
Future Project Status	Planning		Planning			
Future Project Intended Use	New work float and fuel float		Supply fleet with ice, storage lost at Letnikof when plant closed			

	Wrangell	Wrangell	Wrangell	Wrangell
Dock name	Shoemaker Dock	Reliance Dock	Sealevel Seafoods	Wrangell Seafoods
Dock Buildings and Support Structures	40' x 80' work float	Open deck City Dock	Private seafood processor	Private seafood processor
Dock Construction	Steel pile and wood deck dock	Wood pile and wood deck dock	Wood pile and wood deck dock	Wood pile and wood deck dock
Dock Length (feet)	120	80		
Dock Width (feet)	20	40		
Dock Square footage				
Dock Vehicle Capacity	Heavy truck access	Heavy truck access, five ton axle limit	Pickup access to dock	Pickup access to dock
Dock Use Status	Fully functional	Fully functional	Fully functional	Fully functional
Dock Cranes or Hoists	1	2	1	1
Dock Crane/Hoist Capacity	(1) 5,000 lb	(2) 5,000 lb		
Dock Crane /Hoist Use Status	Fully functional	Fully functional	Fully functional	
Dock and Crane /Hoist Fees and Use Restrictions	First two hours free, \$25 for each additional hour, keyed access	First two hours free, \$25 for each additional hour, keyed access		
Ice Machine Location			On dock	On dock
Ice Generation Capacity				
Ice Storage Capacity				
Ice Fees and Use Restrictions				
Dock Comments	Wrangell Harbor has 40' x 100' net float, 10' x 80' storage float, and 12' x 60' boat repair float in inner harbor	Private hoists at Mill Dock, and two seafood processor docks Paid public storage at privately owned Mill Dock.		
Public Upland Gear Storage				
Upland Gear Storage Acreage or Floor Space		7 acres		
Upland Gear StorageFees		one-half cent per square foot per day		
Upland Gear Storage Space Availability		poor Open storage and small storage buildings are full, space is limited, electricity available for freezer vans holding bait, personal frozen goods		
Upland Gear Storage Expansion Constraints				
Needed Facilities	Public cold storage for custom processing, cold storage, freezing			
Needed Services	Haulout and yard for vessels over 30' Separate downtown docks and floats form a harbor complex, rather than discretely separate harbors			
Community Notes				
Future Project Type	New harbor for 250 slips			
Future Project Location				
Future Project Status	Bid			
Future Project Intended Use	Provide more moorage for boats, drive-down work float			

	Dock name	Dock Buildings and Support Structures	Dock Square footage
Baranof	State Dock	Open dock	3,250
Coffman Cove	Coffman Cove Harbor	City of Coffman Cove	
Edna Bay	State Dock	Operated	4,600
Entrance Island	State Dock		3,400
Funter Bay	State Dock		1,200
Funter Bay	State Dock		1,700
Helm Bay	State Dock (Refuge Float)		1,500
Hollis	State Dock		1,000
Kasaan	State Dock		2,000
Taku Harbor	State Dock		5,200
Swanson Harobor	State Dock		3,000
Point Baker	State Dock		1,500
Port Alexander	State Dock		4,700
Port Alexander	State Dock - Inner Harbor		2,500
Port Protection	State Dock - Outer Harbor		4,000
Tenakee Springs	State Dock		2,500
	Tenakee Springs Harbor	City of Tenakee Operated	11,100
Thorne Bay	Thorne Bay City Harbor	City of Thorne Bay Operated	13,800
Hyder	State Dock		5,300
Kasaan	State Dock		5,200
Klawock	Klawock Dock	City of Klawock Operated	1,900
Klawock	Klawock Harbor	City of Klawock Operated	8,200
Ketchikan	Loring Float	Open dock	
Ketchikan*	Knudsen Cove	City of Ketchikan Operated	
Ketchikan*	Hole in the Wall	City of Ketchikan Operated	3,700
Ketchikan*	Ketchikan City Float	City of Ketchikan Operated	11,500
Ketchikan*	Ketchikan Bar Harbor North	City of Ketchikan Operated	26,500
Ketchikan*	Ketchikan Bar Harbor South	City of Ketchikan Operated	44,000

Information about the facilities above is taken from the 1995 Alaska Harbor Directory (ADOT&PH)

* Ketchikan Harbor Master declined to provide additional data

Approximate Summer Freight Service

City	To	Provider	Schedule	Cost
Angoon	Juneau	Wings of Alaska	3 flights daily 1 on Sunday	.40/lb
	Seattle	AML	Seasonal upon request	
	Juneau	AMHS*	See Ferry Service	\$133/25-ft van
Coffman Cove	Ketchikan Ketchikan	Taquan Air Promech Air	Tuesday and Saturday Varies	.60/lb
Craig	Ketchikan	Taquan Air	Tue, Thurs, Fri, Sat	
	Ketchikan	LAB	3 flights daily	.54/lb
	Ketchikan Seattle	Pacific Air AML	3 flights daily Once Weekly Barge Service	.60/lb Varies
Edna Bay	Ketchikan Ketchikan	Taquan Air Promech Air	Tues and Saturday Varies	.80/lb
Elfin Cove	Juneau	Ward Air/Ak Charters	Charter	Varies
Gustavus	Juneau	Wings of Alaska	Two flights Daily, 1 on Sun	.35/lb
	Juneau	Air Excursions	Varied	.35/lb
	Juneau	LAB	4 daily	.37/lb
Hollis	Ketchikan	Promech Air		.42/lb
	Ketchikan	Pacific Air	3 flights daily	.40/lb
	Seattle Ketchikan	AML InterIsland Ferry Authority	Once Weekly Barge Service One per day	Varies
Hoonah	Juneau	Wings of Alaska	5 flights daily, 4 on Sun	.35/lb
	Juneau	LAB	5 flights daily	.37/lb
	Seattle	AML	1 barge per week, Seasonal	Varies
	Juneau	AMHS	See Ferry Service	\$108/25-ft van
Hydaburg	Ketchikan	Taquan Air	Tue, Thur & Sat	
Hyder	Ketchikan	Taquan Air	Mon & Thurs	
Juneau	Multiple	Alaska Airlines	3 times per day north and south	
	Seattle	AML	Twice a Week barge service	Varies
	Prince Rupert	AMHS	See Ferry Service	\$630/25-ft van
Kake	Juneau,			
	Petersburg	LAB	3 flights daily	.37/lb
	Seattle	AML	Once Weekly Barge Service	Varies
	Petersburg	AMHS	See Ferry Service	Varies
Kasaan	Ketchikan	Promech Air		.42/lb
Ketchikan	Multiple	Alaska Airlines	Twice per day north and south	
	Seattle	AML	Twice a Week barge service	Varies
	Prince Rupert	AMHS	See Ferry Service	\$210/25-ft van
Klawock	Same as Craig			
Klukwan	(Shipping via			
	Haines) Seattle	AML	Once Weekly Barge Service	Varies
Kupreanof	Shipping via Petersburg			

Approximate Summer Freight Service

City	To	Provider	Schedule	Cost
Metlakatla	Shipping via Ketchikan Ketchikan	AMHS	See Ferry Service	\$63/25-ft van
Pelican	Juneau Juneau	Ward Air/Ak Charters AMHS*	Charter See Ferry Service	Varies \$190/25-ft van
Petersburg	Multiple Seattle Multiple	Alaska Airlines AML AMHS	Once per day north and south Twice a Week barge service See Ferry Service	Varies Varies \$398/25-ft van
Point Baker	Ketchikan	Taquan Air	Tues & Sat	
Port Alexander	Charter Service Available			Varies
Port Protection	Ketchikan	Taquan Air	Tues & Sat	
Saxman	Shipping via Ketchikan			
Sitka	Multiple Seattle Prince Rupert	Alaska Airlines AML AMHS	Once per day north and south Twice a Week barge service See Ferry Service	Varies Varies \$508/25-ft van
Skagway	Juneau Juneau Juneau Juneau	Skagway Air LAB Wings of Alaska AMHS	Two Flights Daily Four Flights Daily Three Flights Daily, 1 Sun See Ferry Service	.42/lb .42/lb .45/lb \$180/25-ft van
Tenakee	Juneau Juneau	Wings of Alaska AMHS	1 flight daily/Sunday See Ferry Service	.40/lb
Thorne Bay	Ketchikan Ketchikan	Taquan Air Pacific Air	Tue, Thur, Fri, Sat 3 flights daily	.40/lb
Whale Pass	Charter Service Available			Varies
Wrangell	Multiple Seattle Prince Rupert	Alaska Airlines AML AMHS	Once per day north and south Once Weekly Barge Service See Ferry Service	Varies Varies \$325/25-ft van
Yakutat	Multiple Seattle Prince Rupert	Alaska Airlines AML AMHS	Once per day north and south Once Weekly Barge, Seasonal See Ferry Service	Varies Varies \$955/25-ft van

* AMHS one-way cost based on price for 25-foot unaccompanied container van. Does not include cost of transfer of van to or from ferry terminal.

Alaska Ferry System Service – from June 2003 schedule

Mainline is larger ferry, feeder is smaller ferry, commuter is Jnu-Hns-Skg and Ktn-Hollis

Community	Stops per month				
	Mainline		Feeder		Commuter
	Northbnd	Southbnd	Northbnd	Southbnd	
Haines	0	29	0	0	8/mo. north & south
Juneau	33*	31*	0	16	8/mo. north
Ketchikan	33	29	0	0	1/day to Hollis
Petersburg	30	29	9	0	0
Sitka	7	12	9	9	0
Skagway	0	29	0	0	8/month south
Wrangell	28	29	0	0	0
Angeon	0	0	13	13	0
Hollis	0	0	NA	NA	1/day to Ketchikan
Hoonah	0	0	23	13	0
Kake	0	0	8	9	0
Metlakatla	0	0	NA	NA	2/day on Fri, Sat, Sun to Ketchikan
Pelican	0	0	2	0	0
Tenakee Springs	0	0	8	6	0

This count is for June 2003. The number of stops varies from month to month and is consistently lower in winter.

* Two of the Juneau stops are Cross-Gulf runs with connections to/from Seward and Valdez